EDITORIAL INDEX—PAGE 3

COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR FLEET OPERATORS

JANUARY 1949

FOR FAST, EFFICIENT DELIVERIES

You *can't* improve the roads, or change the hauling distances or speed limits to out-perform your competition—

—but you can make sure you're using the best truck for the job!

Reo's More-Load design lets you carry the same big payload in a more compact, *more maneuverable* unit. The shorter wheelbase means easier turning, backing, parking. Reo's more accessible engine means faster, easier servicing, too.

Yes, one way to out-perform your competition on any delivery job is to use Reo Trucks; they're faster, more maneuverable, more reliable because they're easier to service and keep on the road.

Check the complete line of Reo Trucks before you buy.

REO MOTORS, INC., LANSING 20, MICHIGAN **REO**

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The New DODGE "ROUTE-VANS"

17½" Floor to ground

72" Inside width

76" Inside height

but only

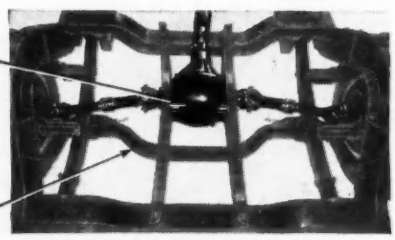
97" Over-all height

32" Side doors

All these advantages are made possible by this revolutionary new chassis

Full-floating *driving* axle. Differential solidly mounted in frame, and rubber-insulated. Drive to wheels is through slip-spline shafts and universal joints. Here is an outstanding engineering achievement.

Note *separate* I-beam load-*supporting* rear axle of special design.



This large-diameter propeller shaft; the rugged clutch and transmission; and the specially designed double-drop frame with husky side rails and rugged cross-bracing, insure long life and economical operation.

Extra rugged front-end construction . . . a "must" in frequent-stop service. Unusually heavy front axle. Large, flexible, rear-shackled front springs. Big brakes.

This 13⅛-inch "kick-up" contributes to the Route-Van's extremely low floor height.

Extra-rugged steering mechanism of double drag-link design minimizes road shocks at the steering wheel. Extra-wide 67-68-inch treads provide short turning diameters. Ease of handling in city traffic is outstanding.

FLUID DRIVE . . . Available, For The First Time, On Commercial Vehicles!

DODGE "Job-Rated" TRUCKS

FIT THE JOB . . . LAST LONGER

TUNE-UP CHEMICALLY ...before you tune-up mechanically

Before you tune-up an engine, make sure it is "chemically clean". Just add Permatex Toon-Oyl to crankcase oil, warm up engine and let it idle. Sludge and carbon-gum binders that interfere with the smooth operation of valves, piston rings, oil lines and oil screens, will be loosened, disbursed and dissolved!

Then, you'll have a "Chemically Clean" engine, ready for your accurate mechanical adjustments!

PERMATEX COMPANY, INC., BROOKLYN 29, N. Y.

COMMERCIAL CAR

Vol. LXXVI Philadelphia, January, 1949 No. 5

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CCJ Reader Digest

Rio Grande Style PM

For beginners and experts alike here's the low-down on one of the most complete preventive maintenance plans we've ever seen. A down to earth what-they-do and how-they-do-it account complete with 11 forms that look a little foreboding but actually are simplified for maximum efficiency. There's one big one that stays with the vehicle so that division garages anywhere can tell the score at a glance. See page 74.

Having VALVE Troubles?

If so, (and who hasn't?) here's a chance to cash in on some tips developed by L. E. Erlwine of Watson Bros., Inc. How they test hydraulic lifters with Go and No-Go gages, check for leaks, install new seats even when not originally equipped and check springs and valve rotation are just some of the points. Then there's a bonus tip on changing hot cylinder heads in 45 minutes. See page 67.

MURDER In the Fleet Field!

This first of a brand new series tells how bearings die when operated in the wrong environment. What happens when there is insufficient clearance, abrasives in the oil, inferior bonding, improper adjustment, overheating, crankshaft thrust or out-of-round con-rod bore are just some of the subjects told in pictures and print. Careful study will save the fleetman from a murder rap at his own expense. See page 80.

LONGER LIFE

for all chassis parts

PLUS *smoother operation* and *lower maintenance costs* when you use Texaco Marfak

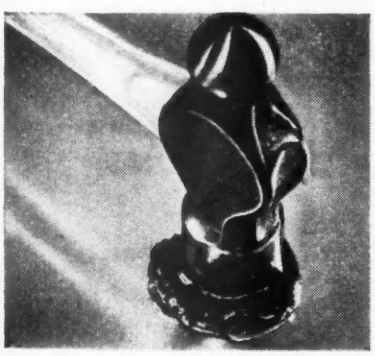
Shoot *Texaco Marfak* into chassis bearings and you've got protection that will last for *extra hundreds of miles* between applications. *Marfak* stays on the job—won't jar out, won't squeeze out, won't wash out. So naturally, all chassis parts last longer . . . you have far fewer replacements . . . your maintenance costs are lower.

In wheel bearings, *Texaco Marfak Heavy Duty* assures similarly long lasting protection and worthwhile reduction of maintenance costs. *Marfak Heavy Duty* seals itself in, seals out dirt and moisture. It guards against rust. It won't leak onto the brakes. Requires no seasonal re-packing.

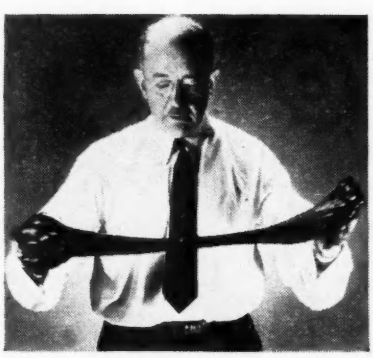
Reduce repair and maintenance expense all around by using Texaco Lubricants and Lubrication Engineering Service. Just call the nearest of the more than 2300 Texaco Wholesale Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

LONGER LIFE FOR *ENGINE* PARTS

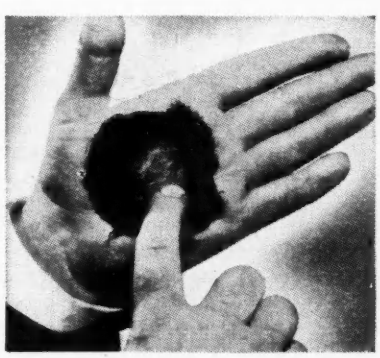
Lubricate engines with *Texaco D-303 Motor Oil*. It's fully detergent and dispersive . . . keeps engines free of carbon, gum and sludge. Results—more power, longer engine life, reduced fuel consumption, lower maintenance costs.



HIT IT! *Marfak* won't splatter like ordinary chassis grease—proof that it stays in the bearings under pounding road service.



STRETCH IT! *Marfak* holds together where ordinary grease comes apart—proof that it can't work out of bearings, gives longer lasting protection.

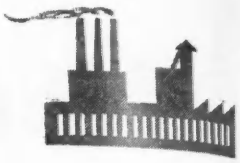


RUB IT! See how *Marfak* liquefies under friction while retaining its tough outer "collar"—proof that it seals itself in, seals out dirt and moisture.

Lubricants and Fuels

FOR THE TRUCKING INDUSTRY

Detroit Dispatch



by LEONARD WESTRATE

CCJ Detroit News Editor

What does the future hold for truck production and sales? . . . Will users really be better off? Are chains worthwhile in ice and snow? . . . Who blocks the Canadian route from Buffalo to Detroit?

1948 May Be Truck Peak

According to opinion in Detroit, 1948 may well mark a high point in truck production for some years to come. U. S. output this year is expected to reach 1,350,000 units, far and away the best production record in history. The thinking now is that next year may see 10 per cent fewer trucks built, at least for the civilian market, although military truck purchases are expected to be higher than they were in 1948.

There is no doubt that the truck industry generally has reached a buyer's market in all models except the very lightest weight jobs such as panels and pickups. Sales have been tapering off and registrations for last year are estimated at 1,030,000 new trucks. The registration figures do not include trucks going to export or government-owned vehicles and other minor classifications and it is therefore difficult to tell what total sales were in 1948.

Dealers Well Stocked

It is very evident that the industry ended the year with a considerable number of trucks in dealers' hands and in manufacturers' inventory. Net result to operators is that they should be in a much better position this year in their negotiations for purchase of new equipment.

One dealer representing a large truck manufacturer in the southwest recently found himself with four medium duty trucks on hand for which he had no takers. In a personal letter to his complete list of prospects, he offered the units at a 15 per cent discount from list, and in addition offered the same discount on future deals. He had no takers. An official of the same company recently returned from a tour of the southern region and reported that trucks were backing up there and estimated that in the particular states involved there may have been 700 to 800 units in dealers' hands. There is no doubt that dealers today have a much larger dollar margin on which to manipulate discounts, since they are getting the same percentage mark-up they had pre-war on a price that is at least 50 per cent higher.

Army Contracts Slow

Negotiation of contracts for ¼ and ¾ ton military trucks is going much more slowly than Army Ordnance would like. Both manufacturers and negotiators for the Army apparently are in no hurry to rush into new contracts. It still is not known when bids will be asked on 2½ ton 6 x 6 military trucks.

. . . Stand Pat on 24-Volts

Although both manufacturers and the NSRB have voiced doubt about 24-volt ignition systems on all military vehicles, Army Ordnance is standing pat on its dictum issued two years ago that all military vehicles be so equipped. AO says it will not change its mind until overruled by higher authorities.

Body Distributors To Organize

Truck body and equipment distributors are contemplating forming an association. An initial planning meeting was held recently in Chicago and it was proposed that the organization become part of the National Truck Body Manufacturers' Assoc. so that both groups could work together. Another meeting is scheduled for this month.

MTA Sets Up Driver File

Michigan Trucking Assoc. is setting up a system to aid members in hiring new drivers. The plan calls for a central reference file containing the names and records of all drivers employed by members of the association. It contains a listing of the driver's name and social security number and will have his employment service record showing dates and places of previous employment. It also will show whether he has had a physical examination and at least a partial report on his physical condition. Before hiring the new man the members can refer to the file and if they want additional information they can refer to the previous employers. Florence Kiely, managing director of the association, says the plan definitely is not a blacklist, but is merely a personnel service.

Chains Still King in Skid Tests

First findings on the winter driving hazard tests held at Clintonville, Wis., last year have been announced. It was found that under severe conditions of ice and snow, truck braking distance was reduced 60 to 70 per cent with the use of skid chains. Steel chains in which each link of the cross chain is especially designed for added traction were found to be superior to round wire cross lengths, especially for greater resistance to side slipping. Rubber chains were found to increase skidding on ice. Tests of tires containing abrasive particles in the tread showed them to be of no particular value on dry ice at low temperature. At higher temperatures on wet ice, stopping distances up to 13 per cent shorter than with regular tires were reported. It is understood that further tests are to be held again this winter.

Canadian Route Blocked

Truck companies operating between Detroit and Buffalo and points east are getting impatient with the continued refusal of the Province of Ontario to negotiate an agreement for passage of truck shipments in bond across Canada. Although there has been a tentative meeting of minds on custom fees and toll charges, the Province continues to ignore a UN treaty which provides for such arrangements and to which both Canada and U. S. are signatories. The Canadian route is 104 miles shorter than the route around Lake Erie and results in six hours' saving in driving time. Operators now are requesting State Department pressure against the Province and have suggested that an Ontario request that this country increase the amount of water diversion on the Ontario side of the Niagara Falls as part of its hydro-power project be held up until the Province recognizes its responsibilities under the international agreement. No reason for the refusal to cooperate has been forthcoming, but some truck operators point out that the railroad interests are very influential in the Province.

K-SPUN

The Miracle Metal For Piston Rings

With the development of K-Spun, the miracle metal for Piston Rings, Koppers engineers and metallurgists turned the piston ring business upside down!

For years, automotive engineers have known that the top compression ring in any internal combustion engine did 85% of the job. But they knew, also, that the all-important top compression ring rapidly lost most of its effectiveness because no metal had yet been developed with "guts" enough to give long service in today's high-speed, high-compression engines . . . and no oil ring has ever been designed that can take over the job of the top compression ring.

First Used in War Planes

Koppers engineering solved the problem with an entirely new piston ring metal. K-Spun, the new miracle metal for compression rings, is the key to piston ring sets that establish new standards of performance. Top compression rings made of K-Spun do everything a compression ring should do . . . and retain their full effectiveness over an amazing period. In its early stages of development, K-Spun helped to increase by five times the flying hours between engine overhauls in Allied war planes. Soon it was even further improved, and the revolutionary American Hammered Set has already established new records in the toughest kind of fleet service. Now, piston ring sets engineered around compression rings of K-Spun are available for automobiles, trucks, buses, tractors, marine and aviation engines, stationary engines.

Guaranteed

American Hammered Piston Rings made of K-Spun with Porous Chrome Plating are guaranteed against breakage on installation or in service for the length of the engine's life!

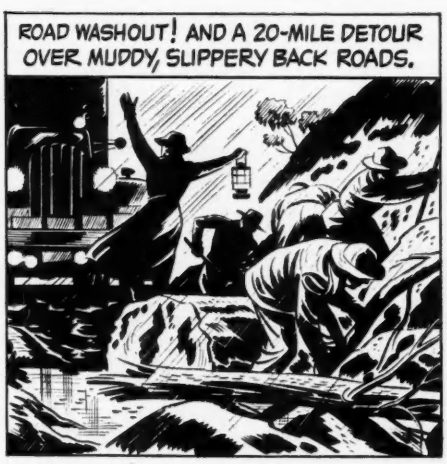
"TIPPING"* the "HOT SHOT"*

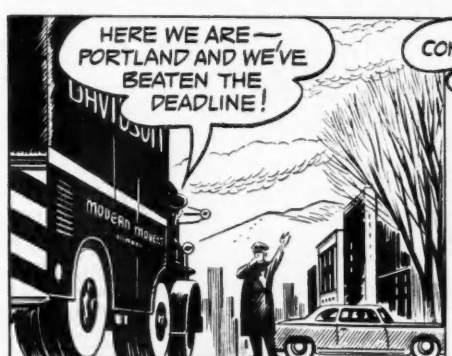
HOW OLLIE CLAYTON AND RAY SHANKLIN ESTABLISHED A RECORD FOR CROSS COUNTRY TRUCKING.
*(TRUCKING TERMS: "TIPPING" MEANS TO GO FAST; "HOT SHOT"—VALUABLE CARGO)

THE DAVIDSON TRANSFER AND STORAGE, BALTIMORE, PROMISES THE "IMPOSSIBLE"—DELIVER AN IMPORTANT CARGO CROSS COUNTRY IN LESS THAN 6 DAYS!

DAVIDSON SAFETY PATROL CHIEF, BILL DUFFY, GUIDES THE "HOT SHOT" SPECIAL BY MOBILE TELEPHONE.

AFTER RIDING OUT BAD EASTERN SNOW STORMS, OLLIE DOES "SACK TIME" IN THE TRUCK'S SLEEPING QUARTERS. BUT THE WORST IS YET TO COME.





ON THE MORNING OF THE FIFTH DAY! DAVIDSON, #599 REACHES GOAL WITH THE PRECIOUS CARGO IN SPITE OF STORM AND DETOURS.

LISTEN TO WHAT JOSEPH DAVIDSON, VICE PRESIDENT AND GENERAL MANAGER SAYS: "THAT TRUCK WENT ACROSS THE COUNTRY AND BACK WITHOUT A BIT OF TROUBLE AND WITHOUT ADDING A QUART OF OIL ON THE ROAD! THANK GOOD SHOP MAINTENANCE AND AMERICAN HAMMERED PISTON RINGS FOR ESTABLISHING THIS RECORD."

Piston Rings

KOPPERS RESEARCH

KOPPERS

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by GENE HARDY
CCJ Washington Correspondent

Washington Runaround

How does the new f.o.b. mill price plan affect trucking interests? . . . Would you like to operate vehicles averaging only 30 miles a day? See "Federal vehicles" . . . What's new on PRA brake tests?

F.O.B. Pricing Clouds Issues

While it is still anybody's guess as to whether the newly-seated 81st Congress will do anything about legalizing delivered pricing, it is becoming increasingly apparent that the trucking industry has a real stake in this controversial issue.

Since the steel and cement industries switched to f.o.b. mill selling and eliminated freight absorption as a result of the Supreme Court's decision outlawing the basing point system in the cement industry, the whole aspect of legal pricing systems has become extremely clouded.

Briefly, the issues appear to be whether all industry will eventually be forced to sell f.o.b. mill, the position taken by the Federal Trade Commission, or whether sellers will be permitted to have uniform delivered prices and to regularly absorb freight to compete with producers located closer to buyers, the method backed by the Senate Trade Policies Committee, set up by Congress to investigate the situation. This latter method of pricing was held to be legal until the Supreme Court upheld FTC in the cement decision.

. . . Absorption Now Illegal

Walter B. Wooden, Associate General Counsel of FTC, and long-time proponent of the exclusive f.o.b. mill theory, has stated that this method of selling is the only safe method now available to business and industry. In other words, it is only by using this system that industry can be reasonably sure that it is operating within the law. The investigating committee, headed by Senator Capehart, R., Ind., deplores this situation and feels that Congress should act to legalize competitive freight absorption and make clear for all time what pricing practices are legal.

In an exclusive interview with COMMERCIAL CAR JOURNAL, William Simon, Chief Counsel of the Committee, stated that the lengthy hearings held by the committee made it quite clear that all transportation would eventually be adversely affected, but that trucks would be affected much less than the railroads. The immediate effect on trucking cannot be harmful, according to Mr. Simon; in fact, the switch to f.o.b. mill selling has resulted in substantially larger quantities of steel products moving over the highways by truck. However, in the long run the exclusive f.o.b. mill theory means less transportation of every type, since this theory presupposes regional self-sufficient areas in contrast to the system of the nation-wide distribution which now prevails.

. . . Private Carriage Favored

Perhaps one of the most significant developments that would eventually result would be a tremendous increase in private carriage at the expense of common and contract carriers. How this would come about was outlined by Mr. Wooden in his testimony before the Trade Policies Committee. He testified that a seller owning a fleet of trucks might transport his products in those trucks and average his trucking costs among all his customers, but that a competitor using the trucks of a common or contract carrier could not average such costs and consider them as a cost of doing business. Thus, as Mr. Simon points out, a seller's right to compete on a national basis may well depend on his financial ability to acquire and operate a fleet of trucks.

. . . Also Warehouse Chains

Another development which is of interest to truck operators centers around Mr. Wooden's testimony to the effect that a seller owning a series of warehouses throughout the country could ship his products to these warehouses and then sell his products in local markets from these warehouses without charging the cost of transportation from the factory to the warehouses. And he said in substance that a competing seller who did not own a series of warehouses could not thus absorb transportation costs. Thus, the right to compete on a national basis may also depend on a seller's financial ability to construct a chain of warehouses and transport his products to these warehouses.

Further highlighting the adverse effect on transportation generally was the testimony of Giles Morrow in behalf of the Freight Forwarders Institute. He told the committee that "if, as many seem to believe, the whole system of absorption of freight charges in order to reach competitive markets is, in and of itself, unlawful, the freight forwarding industry will suffer a crippling blow." He further pointed out that a very large amount of the goods

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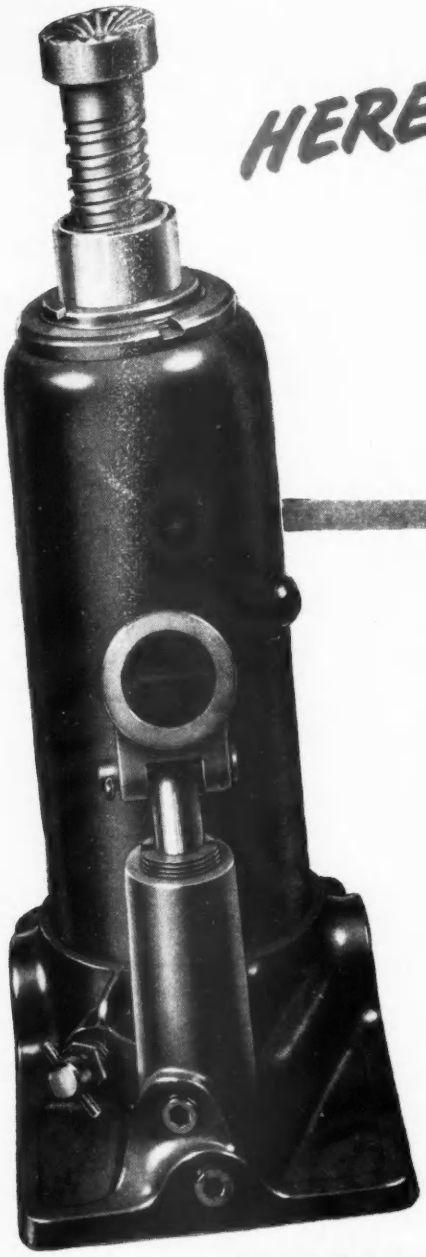

HERE'S THE TOOL BOX JACK THAT'S GOT EVERYTHING

WALKER

SERIES 900

- A CAP THAT CAN TAKE THE RAP
- A RAM WITH SOLID END TO PREVENT BENDING
- CUP LEATHERS THAT WEATHER 10,000 LBS. PRESSURE
- AN OIL TANK WITH EVEN THE AIR ENGINEERED
- A PENDULUM-BALANCED HANDLE SOCKET
- "RYTH-MATIC" VALVE ACTION THAT MAKES OPERATION EASY
- A BASE OK'D BY X-RAY
- PARTS THAT FIT WITH CAT WHISKER ACCURACY
- FILLED WITH HYDROYL-50... NON-CORROSIVE, HYDRAULIC JACK "OIL-ALLOY"

The Famous Walker Series 900 Portable Hydraulic Jacks —from 1½ to 50 tons capacity

When you buy a Walker Series 900 portable hydraulic, you get more than "just a tool box jack." You get as fine a piece of lifting equipment as modern engineering and production can build. You get all the quality and refinement that a third of a century of *Know-How* can bring to a jack. Walker 900's do *what* you want done, *when* you want it done.

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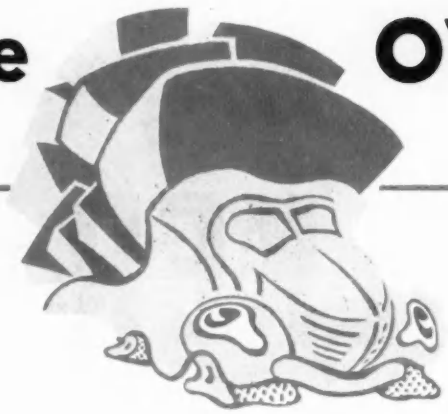
The OVERLOAD



by George T. Hook

Editor

Why Must Some Highway Engineers and Highway Administrators Blame the Effect of Their Own Shortcomings on Motor Trucks?

WE were all set to let go a salvo at state highway officials and engineers when along came the top expert in the highway field. He didn't exactly take the gun out of our hands, but he did flash a gun of his own. And he pointed it, so it seemed to us, at everybody but highway engineers and highway administrators.

• • •

The top expert was Thomas H. McDonald, commissioner of the Public Roads Administration. Said he in his David Beecroft Memorial Lecture:

"Most of the improved mileage (of our principally used street and highway system) has been built under public pressure and also legislative edict, to stretch the dollars over maximum lengths. In general, the design tolerances have been too meagre for today's quantity and characteristics of traffic. Overloaded highways (by traffic capacity) are one of the chief underlying causes of highway accidents."

• • •

Commissioner McDonald's statement, so far as it goes, cannot be disputed. Highway building has been a politicians' picnic. Too much of the mileage has been constructed with an eye on pressure groups and votes. But the responsibility for what has happened must be shared by highway officials and engineers. Being political appointees, too many of them feel that they must play the toady and the hypocrite to hold their jobs. Instead of being servants of the public, which pays their keep, it is unfortunately true in too many cases that they must be the slaves of their elected superiors and of their superiors' political sponsors. How a highway official or engineer in a state dominated by a railroad lobby can live with himself only he can testify. But if his conscience is not irretrievably calloused he must go through a steady succession of ordeals stomaching the insults to his intelligence and the indignities to his sense of justice.

• • •

Anyone who knows the facts of political life must sympathize with the plight of the highway engineer and administrator. But why must the engineers and officials blame motor trucks for things that are their own fault? If a slab of concrete sets up a pumping action, why do they blame it on heavy trucks? The engineers are to blame for constructing a road over a potential cistern. This is just poor engineering.

• • •

If stretches of highway show signs of deterioration, it should not be the occasion for running into print with accusations that trucks are to blame. If the road cannot stand the traffic for which it was designed, there is something wrong with the engineering. If the traffic has outgrown the roadway, why not honestly acknowledge this fact and advocate a better road? If the deterioration is due to the action of frost, why not admit it? If better construction to withstand winter's rigors was not possible with the money originally appropriated, let this fact help determine the future course of action.

• • •

If the highways can stand higher gross weights than are legally allowed, why should the highway administrator advocate restrictive and punitive measures? Why favor spending money on scales and enforcement to deprive the state and its citizens of an improved economy which are its due? Why not contribute to the commonwealth's economy by coming out in support of the higher weights which the roads can stand?

• • •

And why should highway administrators and engineers invoke the sacred name of safety when higher gross weights are asked by truck operators? The load capacity of a highway is one thing; its traffic capacity is another. It is true that the ratio of commercial vehicles to passenger cars has an effect on the traffic-carrying capacity of a road, and this in turn affects safety. But the solution is not in refusing higher gross weights. The answer must be found in increasing the traffic-carrying capacity of highways. The road that was designed to carry trucks and

(TURN TO PAGE 18, PLEASE)

FRYING TO FREEZING *in Two Hours*

Down "south of the border" a Mexican mining company has chiseled a road right through the heart of the Sierra Madre Mountains. Along its 74 tortuous, twisting miles, ore-laden trucks cross six mountain ranges. Elevations range from 600 to 11,000 feet and temperatures change from 110° to freezing.

GMC Diesels were chosen exclusively for this hazardous hauling job because of their ability to pull bigger pay loads than other engines of comparable size . . . because of their dependable, efficient operation at rapidly changing altitudes. All over America, other GMCs are performing many other different and difficult jobs with equal ease and efficiency.

GMC TRUCK & COACH DIVISION • GENERAL MOTORS CORPORATION

Heavy duty GMCs meet every city and inter-city hauling demand . . . with a choice of four gasoline and two Diesel engines . . . single speed, 2-speed, double reduction and tandem rear axles . . . weight ratings up to 90,000 pounds.

GMC TRUCKS

THE TRUCK OF VALUE

GASOLINE • DIESEL

The OVERLOAD

Continued from Page 14

passenger cars in the ratio of 1 to 6.5, which was the case in 1930, cannot be considered as safe today when the ratio is 1 to 4.5. The percentage of commercial vehicles in the total daily traffic flow will continue to increase. For this reason, according to Commissioner McDonald, "more adequate recognition of the requirements of such traffic must be incorporated in the design to insure safe, efficient operation of all traffic."

• • •

Too many state highway administrators and engineers have been shortsighted too long. They have ignored the economic welfare of the whole society. They have harbored and fostered opinions steeped in prejudice with no effort to develop facts. They may be the victims of unsavory politics, but this is no excuse for their attitude toward and their attacks on motor tucks. Truck operators and their association representatives should be fearless in contending with the toady and the hypocrite wherever they find him.

• • •

Forty-four state legislatures will be in session this year. Legislators and their official advisors should not be permitted to hide their anti-truck designs behind a cloak of "safety." Penalizing trucks is not the way to promote highway safety. The 7,250,000 trucks registered in the nation are here to stay. More of them are on the way. It is not trucks that constitute the safety hazard. "The outstanding hazard of our streets and highways is undercapacity for the traffic load." And that comes straight from Commissioner McDonald.

• • •

It is time legislators and officials stopped sentimentalizing safety and began treating it on a sordid economic plane. When they do they will find that the highway—the safety that is built into the highway—is the key to the problem. They will find, as Commissioner McDonald has, that highways designed for safe operation cost no more than unsafe designs if total costs are considered. To quote the Commissioner:

• • •

"The cost of owning, maintaining and operating more than 40 million motor vehicles are many times the expenditure for highway construction and maintenance. When these total costs to road users are considered, plus the value of lost time for the millions of passenger cars used for business and for all vehicles operated by paid drivers, and the value of saving in time on the investment of farmers, merchants and industrialists in their vehicles and in the merchandise carried, there are few highways indeed for which the small additional investment to design for safer operation cannot be justified on the economic basis of returns to road users. When there are added to these costs the cost of highway accidents that can be prevented by highways designed for safety, the economy of such highways is unassailable."

• • •

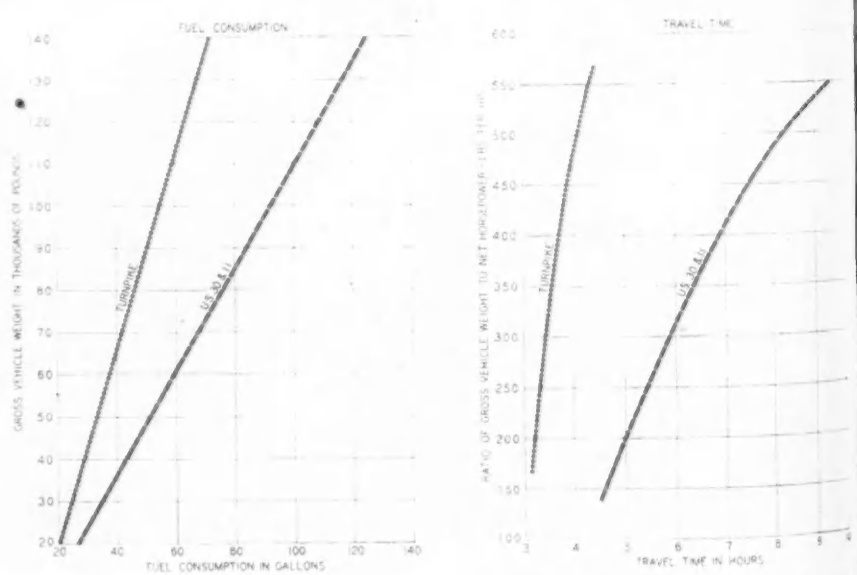
If it ever comes to pass that design-for-safety dominates all highway engineering and the accident toll is reduced thereby, a startling corollary suggests itself. It is this: Will the public be properly shocked to realize that it was not those "damn big trucks" but the short-sighted legislators and their hypocritical, toadying advisers who were responsible for the death and maiming of hundreds of thousands of their fellow men?

Economic Benefits Are Inherent in Modern-Type Highways

SOME idea of the economic benefits which accrue from highways of modern design may be found in the accompanying graphs. They reveal preliminary trends of the Pilot Study made last summer by the Highway Research Board. The savings in travel time and in fuel consumption of a modern highway, such as the Pennsylvania Turnpike over a route of low design standards typical of the large road mileage still in use all over the nation argue loudly for better road construction.

The Turnpike happens to be a toll road but the savings are not an argument for toll roads. Highway users are paying taxes and registration fees which entitle them to such modern highways where the traffic warrants. There is no reason why they should pay for such highways in the first place and then be compelled to buy a ticket to ride on them.

Fuel consumption savings such as shown in the graph suggest lower gas tax revenues. Increased highway usage because of the better roads, will make up much of the drop. If there is any deficit, highway users can be counted on to make up their **just share.**



The Low Cost Answer To High-Speed Deliveries

DeliVr-all delivers the Goods!

Compare DELIVR-ALL with any other delivery vehicle in the world. You'll quickly discover that DELIVR-ALL's in a class by itself—that it's got everything it takes to deliver more goods—faster, cheaper—than you ever dreamed possible.

From stem to stern—inside and out—DELIVR-ALL is designed specifically for door-to-door delivery service. DELIVR-ALL gives you a low, close-to-the ground floor—straight through from front to back. Inside it is high, wide and spacious. This exclusive DELIVR-ALL combination spells bigger loads—faster, easier loading and unloading—longer, more profitable routes.

DELIVR-ALL gives you an exceptionally short wheelbase, too (only 90 inches in the model DVL-4)—provides highest possible ratio of cubic capacity to wheelbase—easier turning—faster parking—greater maneuverability in and through traffic.

But this only begins to tell the DELIVR-ALL story. DELIVR-ALL also gives you wide, easy-opening doors—standing or seated driving—two speed ranges—detachable and interchangeable front-wheel-drive power unit . . . everything you've always wanted in a delivery vehicle—and never found.

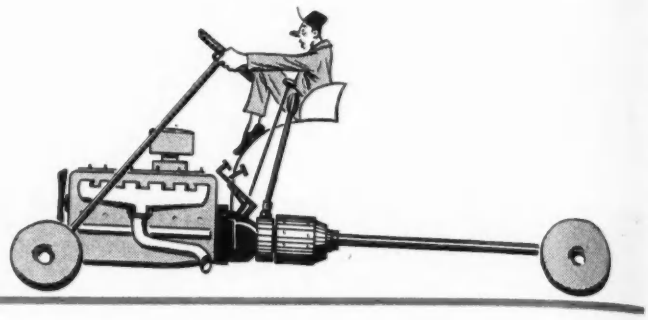
Ask your nearest Marmon-Herrington dealer to demonstrate DELIVR-ALL—with your own loads, on your own routes. You'll know then for sure that DELIVR-ALL is *your best buy—by far.*

MARMON-HERRINGTON COMPANY, INC. • INDIANAPOLIS 7, IND.

MARMON-HERRINGTON COMPANY, INC. DELIVR-ALL INDIANAPOLIS, INDIANA U.S.A.

Conference Corner

Question:



Do You Recommend a Break-in Period and/or Procedure for Power Train Assemblies?

Factory Engineers Say . . .

Loads and speeds should be restricted for the first few hundred miles and in some cases it is advisable to run the assemblies in before the vehicle leaves the shop.

Field experiences indicate the necessity of breaking in transmissions, differentials, transfer cases, wheel bearings, rear axles, having ball or roller bearings.

Simple Precaution Avoids Gear Scuffing, Bearing Damage

by L. W. Fischer

Vice President
Timken Detroit Axle Co.

"Our great concern is proper lubrication of axles, either new or repaired, and have recommended to the field that they follow a simple precaution to avoid scuffing of gears and damage to the bearings.

"With the rear axle jacked up and the transmission in high gear, run the engine at a speed between 25 and 30 miles per hour for approximately five minutes. It will be necessary to jack up *both* rear wheels in order to avoid damage to the differential.

"This operation will circulate the lubricant throughout the final drive and will avoid damage to the internal parts until such time as normal driving operation maintains a continual flow of lubricant. It is possible that some operators may subject a truck to a heavy load or slow speed immediately after a new or a repaired carrier is installed. This results in portions of the carrier being without lubricant before the oil has an opportunity to contact all the necessary points of the carrier and is particularly true of 2-speed double reduction, double reduction and worm drive, or any top mounted drive.

"It is also advisable to follow the above precautions after a vehicle has been idle for a long period of time as well as when installing a carrier as the lubricant may have drained to the bottom of the carrier when not in use."

Recommended Break-In Adds to Life of Units

by I. Hagglund

Detroit Automotive Products, Inc.

"It is important that you properly 'break-in' the Thornton Drive. For the first 100 miles, shift the Thornton gear case from 'high' to 'low' at 10-mile intervals. Drive 10 miles in high, then 2 miles in low—repeating the shift at these intervals for the first 100 miles. This lubricates and burnishes the low-speed gear bushings.

"Top speed during this break-in period should not exceed 30 mph in high gear or 10 mph in low gear. By following these simple instructions, you will avoid overheating of the gear case and add measurably to the life of the Thornton Drive."

Ordinary Precautions Only, are Required

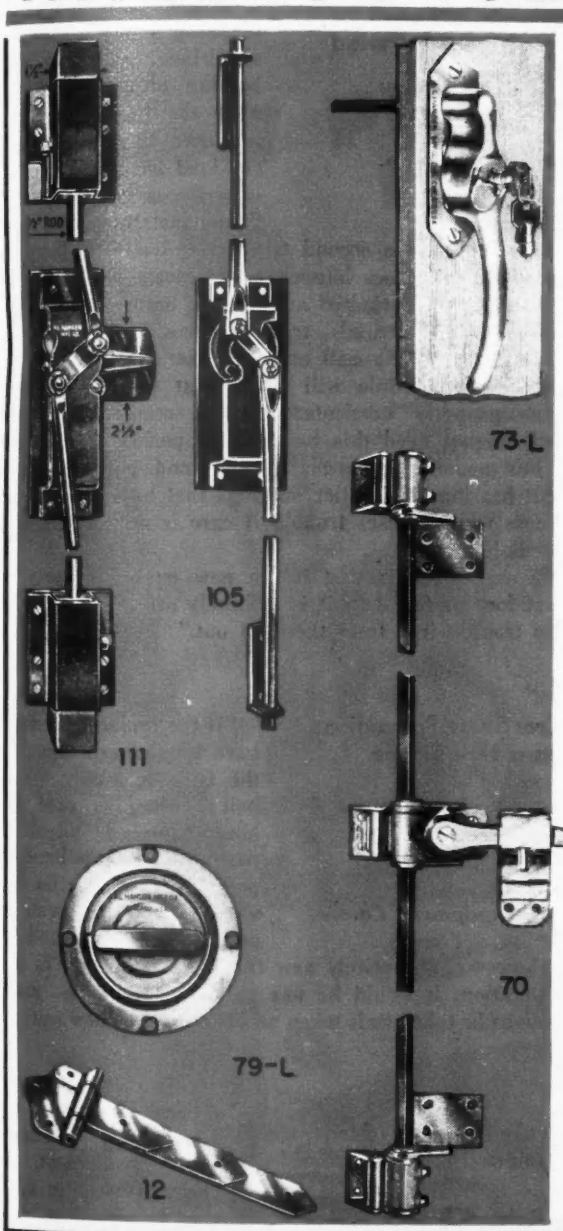
by W. P. Michell

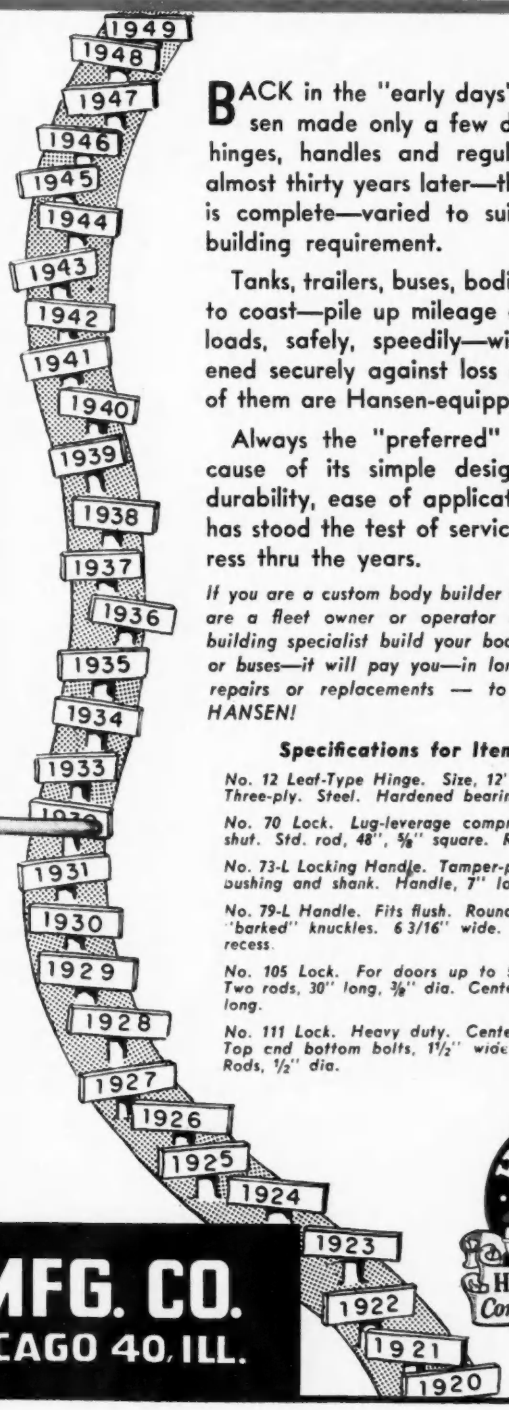
Chief Development Eng.
Spicer Mfg. Div.

"A short run at reduced speed would be desirable on any gear box or axle to complete the circulation of oil to bearings. This, however, is usually accomplished by road tests before the job is delivered, and, in any event, does not constitute a 'break-in.'

(TURN TO PAGE 26, PLEASE)

MILESTONES of PROGRESS





BACK in the "early days"—1920—Hansen made only a few designs in locks, hinges, handles and regulators. Now—almost thirty years later—the Hansen Line is complete—varied to suit every body-building requirement.

Tanks, trailers, buses, bodies—from coast to coast—pile up mileage and carry their loads, safely, speedily—with doors fastened securely against loss or theft. Most of them are Hansen-equipped.

Always the "preferred" hardware, because of its simple design, ruggedness, durability, ease of application — Hansen has stood the test of service and of progress thru the years.

If you are a custom body builder or designer; if you are a fleet owner or operator and have a body building specialist build your bodies, tanks, trailers or buses—it will pay you—in longer service, fewer repairs or replacements — to specify and use HANSEN!

Specifications for Items Shown

No. 12 Leaf-Type Hinge. Size, 12" strap, 2¼" wide. Three-ply. Steel. Hardened bearings.

No. 70 Lock. Lug-leverage compresses doors tight-shut. Std. rod, 48", ⅝" square. Right- or left-hand.

No. 73-L Locking Handle. Tamper-proof. 5/16" square bushing and shank. Handle, 7" long; 4¼" grip.

No. 79-L Handle. Fits flush. Round recess to prevent "barked" knuckles. 6 3/16" wide. Flange, ¾", 4½" recess.

No. 105 Lock. For doors up to 5½'. Rattle-proof. Two rods, 30" long, ⅜" dia. Center, 2½" wide, 6¼" long.

No. 111 Lock. Heavy duty. Center bolt, 2½" wide. Top and bottom bolts, 1½" wide with 1½" travel. Rods, ½" dia.

HANSEN
HARDWARE *for* Commercial Bodies

A. L. HANSEN MFG. CO.
5047 RAVENSWOOD AVE., CHICAGO 40, ILL.

Conference Corner

Continued from Page 22

This is another question submitted by fleet operators for discussion in The Conference Corner. While plans have already been made for introducing other subjects here, we will be glad to have your suggestions for topics of interest to the fleet field. Your problem will be taken up with engineers and factory technicians. They are always glad to help improve vehicle operation and service through recommendations and practical suggestions. Next month we will ask them to discuss the pros and cons of leaf spring lubrication.

"No break-in period at either reduced speed or reduced load is called for by us on any of our mechanical power train units.

"Laboratory tests show that spiral bevel and hypoid gear sets benefit by a break-in period at reduced loads, which seem to cold work the gear surfaces. The factors of safety, however, are large enough so that precautions by customer on the first few miles or days of running are not called for.

Necessary for Gear Tooth and Bearing Seating

by H. H. Hooker

Asst. Chief Eng.
Eaton Mfg. Co.

"Truck users are well educated on the desirability of 'breaking in' the engine on new truck models and, of course, the power train benefits by this procedure since it insures proper initial circulation of oil to the gears and bearings and the 'ironing in' of these parts.

"However, when a new transmission or differential assembly is installed in an old truck or gear and bearing replacements are made in old transmissions or differential carriers, there ordinarily are no instructions given to favor the gears or bearings by a light run-in period.

"This practice places a heavy burden on the new gears and bearings since they immediately start operating with heavy load and speed conditions which might start early surface failures.

"We, therefore, favor a 'breaking in' or 'ironing in' as you might say of the new gears and bearings when these parts are replaced in service. We suggest that the loads and speeds should be restricted for possibly two or three hundred miles to insure proper conditioning of the tooth surfaces of the gears and permit the bearings to seat and relieve themselves to some extent if the are preloaded. A suggested restriction in regards to speed and loads during 'breaking in' period would be 2/3 that ordinarily obtained.

"The necessity for 'breaking in' of wheel bearings is not as great as that required for the bearings in transmissions and differential carriers for the reason that the operating speeds are not as great and the danger of initial surface failures is thus reduced."

Experience Proves Value of Break-In Period

by V. A. Stout

F.A.B. Mfg. Co.
Oakland, Cal.

"A recent experience will illustrate the necessity for breaking in power-train assemblies. A breakover bearing of ours froze up after the truck had been run over 1200 miles without load on it to get various pieces of equipment finally installed. The bearings froze up on the second trip under load. It happens very rarely but it does happen and indicates the necessity for a breaking in period of any type of equipment such as transmissions, differentials, transfer cases, wheel bearings, rear axles, etc. having ball or roller bearings.

"The bearing people will argue that precision ground bearings properly lubricated and in many cases 'pre-greased' do not need this breaking in period. But despite all of our modern care in manufacture and inspection there are ball bearings and roller bearings that have microscopic roughness which causes trouble if care is not exercised in the break-in period.

"Our experience is that if the new equipment gets by the first four or five days it is definitely over the hump and will be trouble free from there on out."

Requires Same Precaution as a New Engine

by E. M. Ott

Supervisor Technical Service
Clark Squipment Co.

"If the replacement units have been reconditioned in the field, and only a new bell housing or case has been replaced, all other parts have had the break-in period, we can see no reason for subjecting same to another break-in period.

"If, however, an entirely new transmission or axle is put into operation, it would be our recommendation the same precautions be taken as is taken on breaking in a new motor."

No Brake-in Required on Truxmore Third Axles

by Robert J. Marble

Sales Manager, Truxmore
Div. Truck Equipment Co.

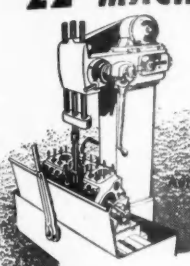
No break-in period is required on our Truxmore Third Axle equipment.

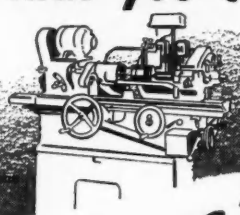
"The movement in most of the bearings on our Truxmore Third Axle equipment is oscillatory, complete revolutions taking place only in the wheel bearings. Our Lubrication Charts which accompany each axle installation state when this periodical lubrication is required."

VAN NORMAN

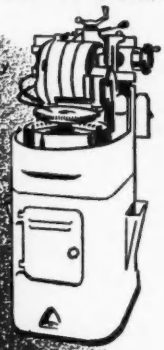
World's Most Complete Line of Jobber-Shop Equipment

22 MACHINES that you can MERCHANDIZE with Pride!





No. 101 High Speed Piston Grinder



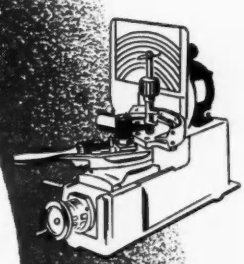
...including

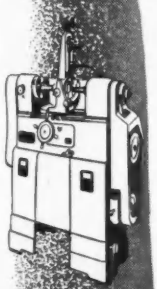
7 PER-FECT-O BORING BARS

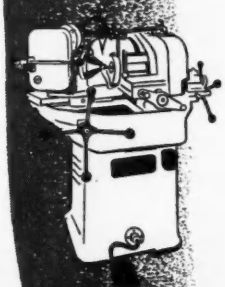
The Bars with the 4 "Cat's Paws"

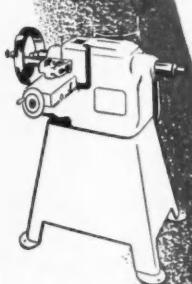
These 4 non-revolving supports are standard exclusives on all Per-Fect-O Bars, like the 777-S shown. They quickly center the bar, then give the cutter a steady-rest all the way down . . . preventing vibration and chatter . . . assuring perfect finish in one quick cut.

Advanced features like these are *good business reasons* why Per-Fect-O Bars . . . and all other Van Norman Precision Machines . . . are found in the leading shops all over the world. Remember: "*It always costs less to get the best*" . . . in service *machines* or service *work*. And that means "get Van Norman!" So see your jobber or write Van Norman Co., Springfield 7, Mass.



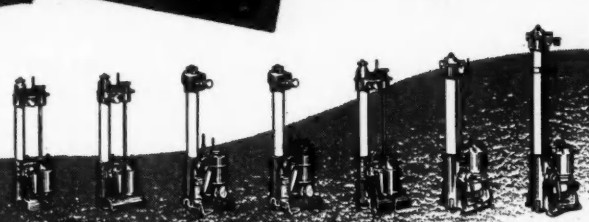


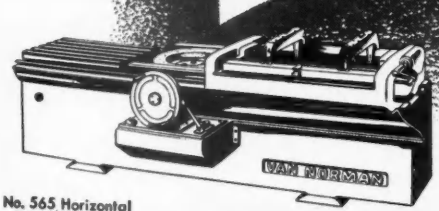




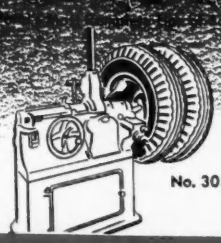
New No. 300 Brake Drum Lathe

No. 777-S Per-Fect-O equipped with "Sucker-Outer"

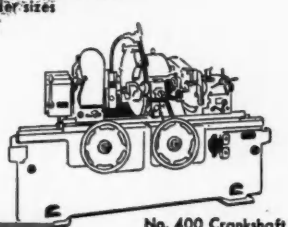




No. 565 Horizontal Surface Grinder



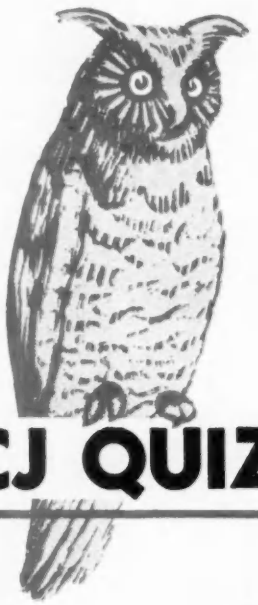
No. 303 Brake Drum Lathe



No. 400 Crankshaft Regrinder (1 of 3 models)

The Best-Equipped Shop Gets the Business! that's why *"It Pays to Van Normanize"*

VAN NORMAN—WORLD'S FOREMOST NAME IN PRECISION SERVICE EQUIPMENT



CCJ QUIZ

by G. W. BAHL

A little knowledge of the industry should enable you to correctly answer seven of the following questions.

Eight out of ten means you'll have no trouble computing your income tax this March, nine out of ten puts you on a par with Einstein and ten out of ten means you've read the industry's statistical yearbook "Automobile Facts and Figures." Please check page 184 for your rating.

1

Car, truck and bus registrations in the United States are at an all-time high, showing an increase of 17 per cent over 1941. The number of vehicles using America's streets and highways at the end of 1948 was more than

☐ 30,000,000 ☐ 50,000,000
☐ 40,000,000 ☐ 60,000,000

2

Highway travel has dramatically pointed up the nation's unprecedented use of automotive transportation. Showing an increase of 20 per cent over the last prewar years, motor vehicle mileage at the end of December, 1948, was

☐ 200 billion ☐ 400 billion
☐ 300 billion ☐ 500 billion

3

49 per cent of the entire U. S. population over 16 years of age are behind the steering wheels of the country's cars, trucks and buses to roll up this enormous traffic volume. The approximate number of licensed drivers at the first of the year was

☐ 50,500,000 ☐ 60,500,000
☐ 60,000,000 ☐ 65,000,000

4

Naturally, the skills and service of a large number of people are required in the manufacture, distribution and use of motor vehicles. The total employed today is approximately

☐ 5,800,000 ☐ 7,800,000
☐ 6,800,000 ☐ 8,800,000

5

Jobs in the commercial vehicle industry alone are at an all-time high, representing the largest single occupational group in the entire country, outside of agriculture. The total employed is

☐ 4,200,000 ☐ 6,200,000
☐ 5,200,000 ☐ 7,200,000

6

Wages also were higher and the wealth created through the use of motor vehicles in 1948 reached a new peak. The portion of the total national income earned last year by people engaged in automotive and related activities was

☐ one-third ☐ one-fifth
☐ one-fourth ☐ one-sixth

7

To meet new highway needs brought about by the growth of the industry, nearly every state and most major cities embarked on vast road building and maintenance programs. The total expended last year was

☐ $2,500,000,000.00 ☐ 3,500,000,000.00
☐ 3,000,000,000.00 ☐ 4,000,000,000.00

8

Livestock, live poultry, vegetables, milk and eggs usually reach their major markets by truck. These commodities are tabulated in the left-hand column below and you are to insert the number of the commodity in the correct column showing the percentage hauled. For example, 42 per cent of all vegetables reach their market by truck so you mark 3 in the space before 42 per cent. See if you can mark the remaining four correctly.

1—Livestock	☐ 52 per cent
2—Live Poultry	☐ 66 per cent
3—Vegetables	☐ 42 per cent
4—Milk	☐ 93 per cent
5—Eggs	☐ 65 per cent

9

Vehicle operators paid a staggering amount in taxes during 1948 to federal, state and local governments. The amount paid was 33 per cent more than in 1941 and, of the total, trucks alone paid almost one-third. The total amount spent was

☐ $ 750,000,000.00 ☐ 2,000,000,000.00
☐ 1,000,000,000.00 ☐ 3,000,000,000.00

10

The increased travel has upped gasoline usage by more than 25 per cent since 1941. The total gallonage consumed in 1948 was more than

☐ 25,000,000,000 ☐ 35,000,000,000
☐ 30,000,000,000 ☐ 40,000,000,000

DRIVE SLOWGANS

by Buster Rothman

A foot on the brake is worth two in the grave.

A motorist is a person who, after seeing a wreck, drives carefully for several blocks.

Gentlemen on the highway always tip their headlights.

The fellows who drive fastest past a school are the same ones who took so long going through it.

Definition of a Speeder: One who plays the hearses.

These pithy slogans are worth their weight in gold if used properly in the fleet field. We suggest that these messages be reproduced in large type—on the blackboard or on the shop bulletin board—or used in letters and news bulletins to employees.

JOBSERVATIONS

by Buster Rothman

It doesn't take much sweat to work yourself to the bottom.

Business is like a wheelbarrow: it stands still unless someone pushes it.

Guys who want to set the world on fire don't spend their time warming chairs.

Big shots are only small shots who keep shooting.

All things come to those who wait, but they come sooner if you go after them.

NEW!

STOP

OVERHEATING TROUBLES

Eliminate radiator, block cleaning and rodding costs

★ *Cleans* both the motor block and radiator of lime, scale, rust, and other debris and filters it completely out of the system.

★ *Keeps* the water (or any other coolant) clean and clear, prevents the further accumulation of lime, rust, scale and other debris.

★ *Makes* the use of inhibitors and cleaning compounds entirely unnecessary.

★ *Assures* proper and unrestricted circulation of coolant at all times.

MODEL TB (ILLUSTRATED) FOR TRUCKS AND BUSES 1½ TON AND OVER. MODEL A FOR PASSENGER CARS, TRUCKS AND BUSES TO 1½ TON.

WRITE FOR DETAILS

SPARK-O-LINER CORPORATION
MINNEAPOLIS 4, MINNESOTA

INSTALL THE NEW

Perry *Cooling System* Filter

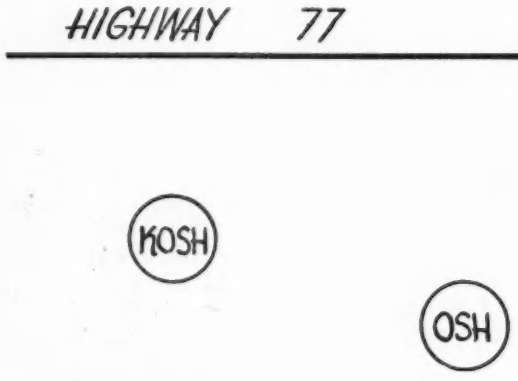
PAT. PENDING

Time Out for PLAY

by
BORIS RANDOLPH

Without Detours

The towns of Osh and Kosh are located south of Highway 77, as shown in the figure below. You want to build two roads, one from the highway to Osh, and the other from the highway to Kosh, and you want both



roads to start from the same point on the highway. Naturally you want to save money on this job, so you want both roads to start from the most economical point possible. Find that point.

Without Benefit of Algebra

Try this one without benefit of algebra, just reasoning it out:

One mechanic asked another how much he had made that week.

"$130," replied the other.

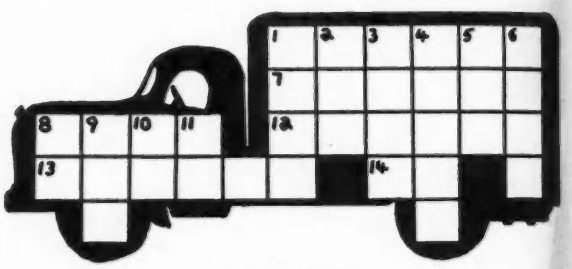
"No fooling!" exclaimed the first. "Did you really make that much?"

"No," grinned the second mechanic. "I was only kidding. I gave myself the benefit of $2 less than one-fifth of what I really made."

How much did he really make?

Truckword Puzzle

Many of the words in the crossword puzzle below relate to trucks in some way.



DEFINITIONS

Across

1. Motor inventor
7. A machine
8. A bright thought
12. Sharp corners
13. A wheel guard
14. Like this

Down

1. Expensive
2. Overnight stopping place

Down (Cont.)

3. A load of cackleberries
4. Silage holders
5. Compass point
6. Not as much
8. Providing that
9. Hood moisture
10. Half an em
11. Truck sale announcement

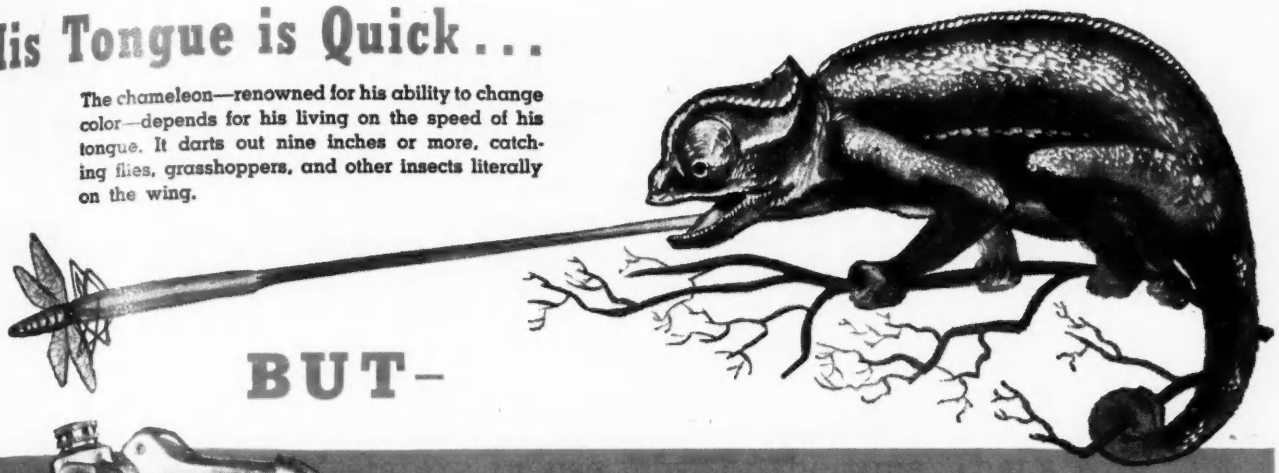
The Tool Buyers

Two mechanics and their helpers went shopping for some tools. Each bought a different number of tools, paid the same price for each of *his* tools, and bought as many tools as he paid dollars for each tool; that is, 2 tools at $2 apiece, 3 tools at $3 apiece, 4 tools at $4 apiece, and so on. They all bought less than 10 tools each, and each mechanic spent $45 more than his helper. Now if the mechanics names were Tom and Jerry, and the helper's names were Mike and Ike, and Tom bought one tool more than Ike, can you tell (and we're not kidding), which helper worked with which mechanic?

DON'T PEEK—But Solutions will Be Found on Page 142

His Tongue is Quick . . .

The chameleon—renowned for his ability to change color—depends for his living on the speed of his tongue. It darts out nine inches or more, catching flies, grasshoppers, and other insects literally on the wing.



BUT—

Nothing is Quicker than GENERAL QUICKAID FIRE GUARD For Fighting Fire!

Your life or your property may depend on the speed of your fire fighting equipment. A few seconds may spell the difference between a tiny flame and an unmanageable blaze. Quick-Aid Fire Extinguishers save you precious seconds because they operate quickly, cleanly, efficiently. Quick-Aid Carbon Dioxide Extinguishers (illustrated here) are available in all sizes from 2½ to 100 lbs. They are Underwriters' Approved and especially recommended for fires in electrical equipment, gasoline, and chemicals. Look in the classified section of your telephone book for the Quick-Aid trade mark or write direct for the name of your nearest dealer.

IF IT'S GENERAL IT'S DEPENDABLE

THE GENERAL DETROIT CORP.

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CCJ NEWSCAST

DATES AND DOINGS

JAN. 10-14—SAE Annual Meeting, Book-Cadillac Hotel, Detroit, Mich.

JAN. 17-19—Truck-Trailer Mfrs. Assn., Inc., Annual Convention, Edgewater Gulf Hotel, Edgewater Park, Miss.

JAN. 27-28—National Council of Private Motor Truck Owners Annual Meeting, Claypool Hotel, Indianapolis, Ind.

FEB. 24—Annual Dinner, New York State Motor Truck Association, Hotel Statler, New York.

MAR. 24—Annual Meeting, Maine Truck Owners Association, Falmouth Hotel, Portland, Maine.

MARCH 28-30—Society of Automotive Engineers National Transportation Meeting, Statler Hotel, Cleveland, Ohio.

MARCH 28-APR. 1—Short Course for Motor Vehicle Fleet Supervisors, University of Florida, Gainesville, Fla.

MAY 9-13—Annual Spring Meeting, Council of Safety Supervisors and Equipment and Maintenance Council, ATA, Melbourne and Sheraton Hotels, St. Louis, Mo.

JUNE 1-3—President's Highway Safety Conference, Departmental Auditorium, Washington, D. C.

OCT. 15-20—Baking Industry Exposition, Municipal Auditorium, Atlantic City, N. J.

OCT. 21-26—Annual Convention, American Trucking Associations, Inc., Hotel Statler, Boston, Mass.

BURLINGTON MILLS IS PRIVATE CARRIER

Division 5 of the Interstate Commerce Commission (by a two-to-one vote) last month decided that the motor truck operations conducted by the Burlington Mills Corp. constitute private carriage not carriage for-hire and ordered discontinuance of its proceedings against the firm. This is the third important decision rendered in recent months which upheld the principle that issues of for-hire vs. private carriage should be determined on the basis of the operator's primary business rather than on a compensation basis.

In making this decision, the Commission followed the recommendations of its trial examiner and applied the principles previously enunciated in the "Woitishek" case and more recently affirmed in the "Lenoir" and "Schenley" cases, in which the primary business test was considered as the controlling factor in distinguishing between private and for-hire motor carriage.

The questions at issue in this case arose from an investigation, upon the Commission's own motion, into the motor carrier operations of Burlington Mills Corporation and its various related or subsidiary corporations; the purpose being to determine whether such operations, or any of them, were subject to the provisions of the Motor Carrier Act and required ICC operating authority. The proceeding was handled upon a stipulated record, without a formal hearing.

MEET ME IN ST. LOUIS

The annual spring meetings of the American Trucking Associations' Council of Safety Supervisors and its Equipment and Maintenance Council will be held May 9 to 13 at the Melbourne and Sheraton hotels, St. Louis. The National Committee on Street and Highway Safety also will hold a business session in conjunction with the supervisors' meeting.

A. D. Mason of Complete Auto Transit, Inc., St. Louis, and vice president of the Missouri Truck and Bus Assoc., has been named chairman of a local committee which will cooperate with ATA officials in arranging for the spring meetings. Present plans, still tentative, provide for an equipment exhibit during the sessions and visits by the delegates to St. Louis truck terminals and shops.

TRUCK-TRAILER CONVENTION

H. D. Horton, newly-elected president of the American Trucking Associations, Inc., has accepted an invitation to speak at the Eighth Annual Convention of the Truck-Trailer Manufacturers Association, to be held at the Edgewater Gulf Hotel, Edgewater Park, Miss., Jan. 17 to 19.

Other tentatively-scheduled speakers are F. A. Schotters, operations vice-president, The Trailmobile Co.; E. J. Lucas, sales manager, Kingham Trailer Co., and Col. David J. Crawford, Commanding Officer, Detroit Tank Arsenal.

CHEVROLET TRUCK PRICES UP

Increases in prices ranging from $50 to $90 per unit on light and medium duty trucks have been announced by Chevrolet in conjunction with the introduction of 1949 commercial cars and trucks (see page 145) which went into production Dec. 13. These increases, however, do not apply to two-ton models.

FORD '49 MODELS

Effective last Dec. 1, all Ford trucks are being designated as 1949 models, according to a company announcement. Changes in engine prefix and truck model designations only are involved. There are no mechanical or other changes, and the series designation will remain the same, from F-1 through F-8.

H. C. MADDUX DIES

Henry C. Maddux, sales manager of the Timken-Detroit Axle Co., died on Nov. 22, stricken with heart attack. He had served with the company for 25 years.

WESTERN GROUP ADOPTS SIZE-WEIGHT RECOMMENDATION

Members of the Western Highway Institute representing the motor carrier industry in the 11 Western States agreed at a recent meeting in Las Vegas, Nev., upon the following size and weight recommendations:

Body width, 102 in.

Tractor semi-trailer overall length, 60 ft.

Semi-trailer length, 45 ft.

Maximum combination length, 65 ft.

The group favored retention of the present western states' standard of 18,000 lb axle load, but specified that the subject of axle loads should be further explored when highway improvements in the West are more advanced than at present. The WHI also voted against any vehicle weight formula, other than the axle load limitation, except for concentrations of axles under 18 ft.

COLORADO USERS AGAINST TOLLS

The Colorado Highway Users Conference, unanimously opposing toll roads at a recent meeting, is pointing the way toward repealing existing toll road legislation in that state. If this development should come, Colorado would be the first state reversing the national toll road threat.

INDUSTRIAL NOTES

The Phadis Tire & Rubber Co. is being dissolved and its Newark, Ohio, plants are to be sold at auction. A sales agency formed by Burt Pharis and to be known as Pharis Incorporated will market Pharis tires and tubes to be made by The Mans-

(TURN TO PAGE 200, PLEASE)

MOTOR RYTHM*

...For better engine performance

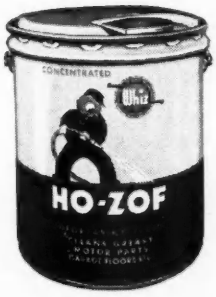
Winter driving is hard on motors . . . especially hard on yours. Your fleets are in use most of the time. That's why you need Motor Rythm . . . to keep your motors clean inside . . . free of power-wasting carbon and gum. Motor Rythm does the job the modern way . . . the chemical way. Motor Rythm works while your motor is working. Motor Rythm means easy, quick starts for cold motors. Motor Rythm is your assurance of better, longer motor service. See your Whiz jobber today.

R. M. Hollingshead Corporation, General Offices: Camden, New Jersey. Canadian Offices: Toronto. Warehouses: Dallas, San Francisco, Chicago.

Protect your fleet with the line you can depend on

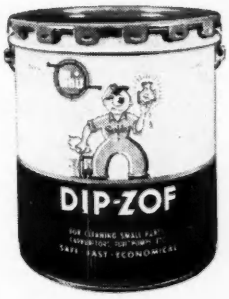
WHIZ LOOSEN-ALL

A few drops frees stubborn nuts, bolts, frozen valves, pistons, cylinder heads. Loosens parts seized by rust, scale, corrosion, red or white lead, paint, shellac, carbon, gum. Saves time and labor.



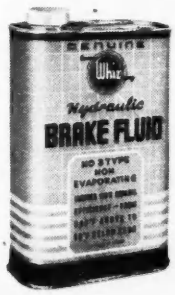
WHIZ HO-ZOF

Concentrated solution for safely removing grease, oil, and grime from motors, tools, brake linings, floors, etc. Creates no inflammable, noxious fumes. Mix small portion with kerosene, then spray or brush on, allow to penetrate and hose off with water.



WHIZ DIP-ZOF

The modern, chemical way to clean carburetor and other small metal parts. A cold immersion cleaner that quickly removes grease, sludge, carbon, gum, varnish, paint, ethyl stain without scraping.



WHIZ BRAKE FLUID

For all hydraulic brakes. Assures smooth, safe stops in any climate—from 50° below to 250° above zero. Will not evaporate, rot, or swell rubber. Non-injurious to any part of the braking system.

PRODUCTS OF *Hollingshead*
LEADER IN MAINTENANCE CHEMICALS

LAUGH IT OFF

The personnel manager for a prominent tire and rubber company was interviewing an applicant for a job.

"What have you done before?" the job seeker was asked.

"I was a truck driver on a city milk route," came the reply.

"And what wages did you get?"

"I got sixty dollars a week and my milk," said the ex-driver.

The personnel man reflected for a moment. "Well, I think I can give you a job," he said. "Come along. We'll start you at sixty dollars a week, and wean you in the bargain."

CCJ

Ooie-Gooie was a worm,
a little worm was he.
He crawled out on the highway,
a trailer truck to see.
The truck was coming very fast . . .
Ooie-Gooie.

CCJ

A beautiful January moon shone down on the parked car in which sat Safety Sadie and her bashful boy friend.

"Dear, you remind me of Don Juan, the great lover," murmured Sadie.

"Why?" he asked hopefully.

"For one thing," snapped Sadie, "he's been dead for years and years."

The long distance van driver was negotiating a particularly tricky stretch of highway through the Tennessee hill country when he suddenly saw a house burning up ahead a little way. Hurriedly parking his unit, he raced up to the front of the building and pounded lustily on the door until it was opened by a grandpappyish looking individual.

"Mister, your house is on fire!" cried the driver excitedly.

"Eh?"

"I say your house is on fire!"

The old geezer put his hand to his ear and leaned closer. "What?"

"Your house is burning up!" he roared at him.

"Oh! Is that all?"

"Well," sputtered the van driver, taken aback, "that's all I can think of just now!"

CCJ

CATTY CORA SAYS THAT SHE WAS SO FLATTERED WHEN HER NEW BEAU KEPT CALLING HER "FAIR LADY" . . . UNTIL SHE FOUND OUT HE WAS A DRIVER ON AN INTER-CITY BUS.

CCJ

It was the first day of school and the teacher was going from desk to desk, making the acquaintance of her new class. Stopping in front of the desk of little Mehitabel, the daughter of a trailer manufacturer, she inquired, "What is your father's name?"

"Daddy," replied Mehitabel.

"Yes, I know that," said the teacher, "but what does your mother call him?"

"She doesn't call him anything," was the girl's sharp reply. "She likes him."

CCJ

Stern-Visaged Teacher: "That's the fifth time this week that you have failed to prepare your lesson. Have you anything to say for yourself?"

Shop Foreman's Son: "Yes, ma'am. I'm sure glad it's Friday."

The traffic rate clerk was teaching his wife to drive. Halfway down the hill she gave a scream of horror. "George," she cried, "the car is running away. Can't you stop it?"

"No," replied the rate clerk, "I can't reach the controls. Use your brakes. Use your brakes."

"I can't, they must have failed," wailed his wife.

"All right," he said sitting back, "brace yourself and try to hit something cheap."

CCJ

LOCAL TEMPERANCE WORKER: "STOP! DO YOU THINK A GLASS OF THAT VILE STUFF WILL QUENCH YOUR THIRST?"

O. S. & D. CLERK: "NO, MA'AM. I'M GONNA DRINK THE WHOLE BOTTLE."

CCJ

The tank fleet operator was convalescing from a major operation. His doctor was afraid that the new nurse wasn't paying as much attention as she should to her patient's health. Calling her out into the hallway, he demanded, "Miss Green, have you kept a chart of the patient's progress?"

"No, sir," she said, blushing becomingly, "but you may look at my diary."

CCJ

Dispatcher: "If a man steals, no matter what, he will live to regret it."

City Driver: "Oh, come now. Didn't you steal kisses from your wife before you were married?"

Dispatcher: "Well, you heard what I said."

CCJ

The grease monkey and his latest lady fair made a romantic pair as the car rolled smoothly along an enchanting woodland drive. Suddenly the lady broke the spell:

"John, dear," she asked, softly, "can you drive with one hand?"

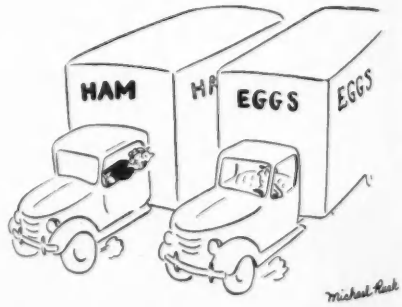
"Yes, my sweet," he cooed in ecstasy of anticipation.

"Then," said the lovely one, "you'd better wipe your nose, it's running."

CCJ

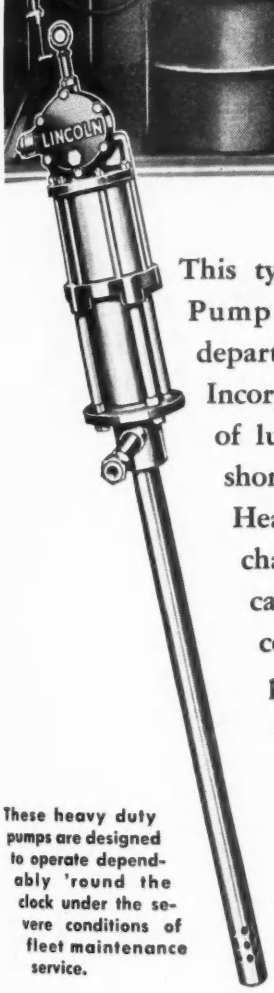
A girlie who dressed near a door so
Displayed much too much of her torso
That a crowd soon collected—
Do you think they objected?
Yeah, some were in favor of more so!

RESUME WORK

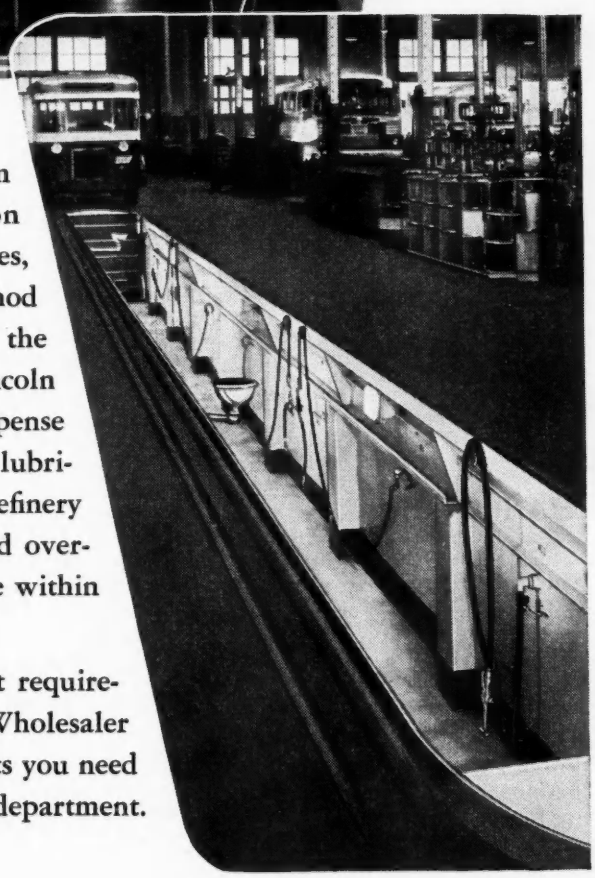


"Open to a little business transaction?"

LINCOLN HEAVY-DUTY LUBRICATING EQUIPMENT



These heavy duty pumps are designed to operate dependably 'round the clock under the severe conditions of fleet maintenance service.



This typical Lincoln Heavy-Duty Drum Pump installation in the lubrication department of the Southern Coach Lines, Incorporated, provides an efficient method of lubricating vehicles thoroughly in the shortest possible time. The four Lincoln Heavy-Duty, Air-Operated Pumps dispense chassis lubricant, motor oil and gear lubricants direct from original 400-lb. refinery containers through pipes to pit and over-pit outlets. All hose assemblies are within easy reach for fast operation.

No matter what your equipment requirements may be, your Lincoln Wholesaler will gladly recommend the units you need or help you plan a complete department.

TRADE NAME LINCOLN
REG. U. S. PAT. OFF.

A48-31

LINCOLN

Lincoln is the originator of the Kleenseal Surface Check Grease Fitting—the new modern fitting with the ball in the top.

LINCOLN ENGINEERING COMPANY
Leaders in Lubricating Equipment for a Quarter Century
5701 NATURAL BRIDGE AVE., ST. LOUIS 20, MO.

PUBLICATIONS

FREE

USE POSTCARD — NO STAMP NEEDED

1948's nine best offerings repeated here because of their contribution to better maintenance vehicle operation, mechanic and driver training

L145. Tire Handbook

Truck Operators' Handbook featuring a discussion of the factors which can be controlled to get the most service out of any truck tire.

Overloading and improper load distribution, together with an easy formula for analyzing loads is also a prominent part of the publication, as well as a discussion on speeds and their effects on tire life.

L146. Spring Service

This 30-page, pocket size booklet on leaf spring troubles prepared expressly for the fleet operator as a guide to better spring service and inspections. Causes and cures of common spring troubles are highlighted in the booklet.

"Tips on Spring Inspection and Service" covers U-bolt and spring clip maintenance, and lubrication practices.

L147. Overhaul Manual

"Successful Reboring," a 12-page publication prepared as a practical guide to cylinder wall refinishing. The manual takes up such subjects as surface treatment, grit removal, honing and surfacing. The manual shows how to fit pistons, rings and piston pins, while tips on piston skirt beveling, piston lubrication, and how to break in a newly rebuilt engine will help the mechanic in his work.

L149. Driver's Guide

A concise treatment of the fundamental rules of safe driving especially prepared for truck and bus drivers available to the fleet field in the form of a 40-page, pocket size booklet entitled "The Commercial Vehicle Drivers' Guide Book."

L153. Battery Service

This comprehensive battery service guide can be used for reference and mechanic training in any fleet.

Among the data presented in the 24-page manual are recommendations for the care of batteries in stock, information on charging, checking state of charge as well as an explanation of SAE ratings.

L156. Cooling System

A 100-page manual entitled Automotive Engine Cooling Systems provides a general background for the study of the cooling system, showing types of systems, component units, and their functioning.

The manual emphasizes preventive maintenance. Detailed information is given on causes and cures of cooling system troubles.

L160. Size & Weight Booklet

The 1948 Truck and Trailer Size and Weight Restrictions Booklet which includes the most up-to-date listing of laws affecting size and weight restrictions for commercial vehicles covers all of the 48 states and explains graphically the differences between the motor vehicle laws of the several states.

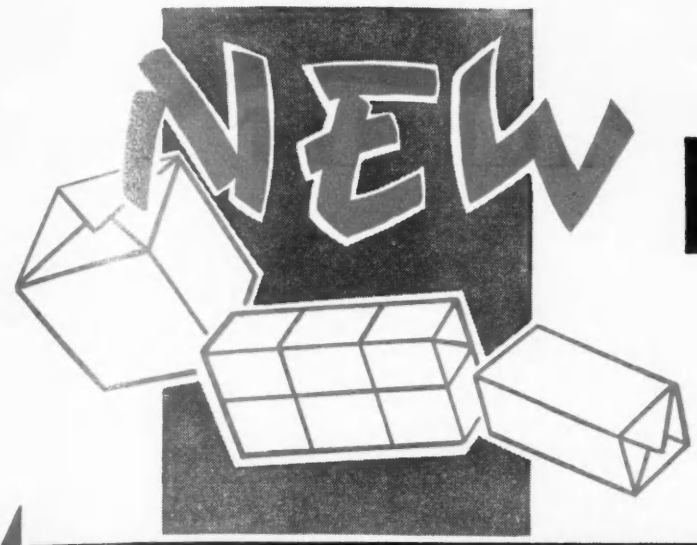
L179. Bearing Maintenance

A 20-page manual on anti-friction bearing maintenance compiled by the Engineering Committees of the Anti-friction Bearing Mfrs.' Assn.

Instructions include general handling tips, information on mounting and removing, cleaning directions, etc.

L180. Fleet Forms

A copyrighted system designed by a fleet accountant for keeping accurate and complete information on every vehicle in a fleet. Included in the Fleet Forms system are Cost and Service Records, Gas Pump Detail Records, 1000 Mile (or 30 Day) Inspection Reports, Drivers' Receipts, Drivers' Trip Reports, Cashiers' Vouchers, Service Call Reports, Service Orders, Service Reports, En Route Service Reports and "Avoid Verbal Orders" pads. Each form can be ordered separately.



PRODUCTS

USE POSTCARD FOR MORE DETAILS

Illustrating and reviewing briefly newest developments in parts, accessories, shop equipment and tools. For more information mail free postcard

P103. Wheel Positioner

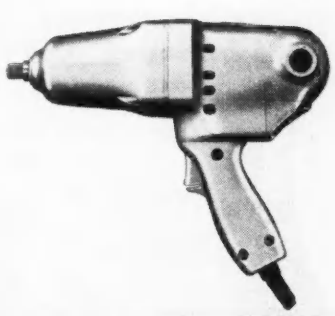
The Wilco wheel positioner for gaging and correcting camber, caster and toe in. Bracket is clamped to front of wheel to determine camber reading. Caster is also checked with gage in position. Steel tape set into unit is used for checking toe in. Glass level tubes, set properly, insure correct readings. All readings taken from spirit level tubes. Unit is compact, portable and remains on wheels while adjustments are made. Wilco Products, Inc., Orange, N. J.

P104. Windshield De-Icer

"HotSpray," a liquid windshield de-icer, removes ice that has already formed and leaves a protective coating that retards formation of new ice. Applied at night on windows of cars left outside, HotSpray prevents formation of frost. Retains its effectiveness below temperatures of —15°F. O. E. Linck Co., Clifton, N. J.

P105. Impact Wrench

New Impact Wrench will quickly tighten or remove either left or right-handed nuts, bolts, and cap screws.



Rated at 3/8-in. thread diameter, it spins a free running nut or bolt to a seating position with high speed, direct-drive action—then within a matter of seconds a rapid, rotary hammering action drives the nut or bolt to maximum tightness. In removing a fastener the hammering action loosens the nut or bolt, and the direct-drive rapidly spins it free.

There is little or no tendency for the tool to twist in the operator's hand. Light weight and minor torque reaction reduces operator fatigue. Made of sturdy, streamlined aluminum castings and has a B&D universal motor. The Black & Decker Mfg. Co., Towson, Md.

P106. Color Visualizer

New color visualizer for use with Kem Transport Enamels now makes it possible to visualize how the vehicles will look after painting. Visualizer consists of a series of 50 color chips with celluloid masks illustrating five individual body types. By selecting a color or combination of colors and laying the appropriate mask over the chips, one can see exactly how the fleet will look when restyled and repainted.

The primary idea of the color visualizer is to put in the hands of the truck maintenance man a tool with which he can quickly and easily secure the different color combinations according to his own needs or to meet his special requirements. The color chips are arranged to provide a choice of 1225 color combinations. Sherwin-Williams Co., Cleveland, Ohio.

(TURN TO PAGE 52, PLEASE)

Now you can standardize on a single cable for all ignition rewiring . . . this one cable that meets every requirement of every vehicle in every climate.

Out of Packard's constant research and progress has come the new, improved Packard Four-Forty, better in performance and in appearance. It's engineered by specialists to give more miles per replacement—to possess extra resistance to heat and cold, to abrasion and moisture, to age and corona.

For superior performance and economy . . . for more miles per replacement . . . specify this one cable—Packard Four-Forty—for every ignition job.

Packard

REG. U. S. PAT. OFF. TRADE MARK

Packard Electric Division, General Motors Corporation
Warren, Ohio

FOREMOST BUILDER OF AUTOMOTIVE AND AVIATION WIRING

WHEN THE JOB IS *Tough*

ROSS BRINGS EASE . . . AND ECONOMY

Ross

Cam & Lever **STEERING**

IN ANY WEATHER, over any road, every steering job becomes easier, safer and more economical with Ross as standard equipment. For every type of heavy-duty service, Ross steering will please and satisfy you.

Experience gained through the use of Ross steering gears on military vehicles during world war II has led to current improvements in Ross design, resulting in: (1) ***Increased mechanical reduction*** . . . (2) ***More compactness of design*** . . . (3) ***Reduction in weight*** . . . (4) ***Greater arm angular-travel*** . . . (5) ***Improved metallurgy*** . . . (6) ***Increased efficiency.***

Throughout 41 years of leadership in this industry, Ross gears have been distinguished for long life, simplicity of adjustment and maintenance of long-recognized qualities of safety, stability and performance. We invite discussion of any steering problem.

ROSS GEAR AND TOOL COMPANY • LAFAYETTE, INDIANA

PRODUCTS

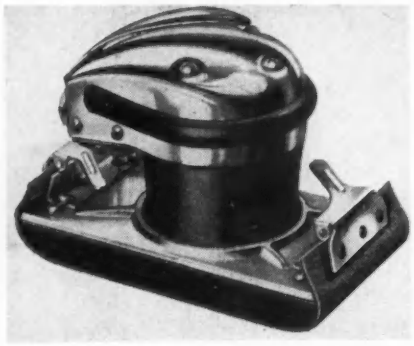
(Continued From Page 49)

P107. Spotlight

Hermetically-sealed, all-glass aluminized "light duty" spotlights. Lamp No. 4515 has a parasol-shaped filament shield which produces a narrower beam spread. Lamp No. 4516 is unshielded. Lamps are 30 watts, 6-8 volts, PAR-36, screw terminal base, 100 hours rated average life, 4½ in. maximum diameter, 2¾ in. maximum overall length. Lamp Division, Westinghouse Electric Corp., Bloomfield, N. J.

P108. Air Sander

The National Air Sander Model 400 for almost any sanding job. Speed can be varied from 4000 to



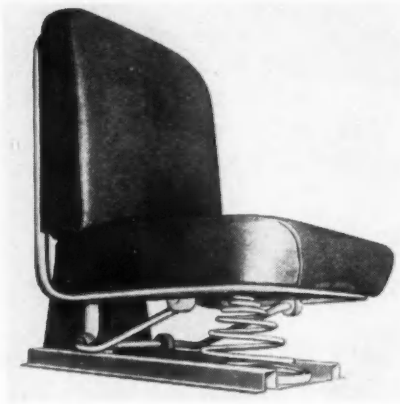
6000 rpm. Pads are designed for various operations, and can be readily interchanged. Weighs 4 lb, and is shaped to fit the hand. Can be operated in close quarters. National Air Sander, Inc., Rockford, Ill.

P109. Paint Sprayer

Paint Sprayer which can be used for all types of spraying and for inflating tires. A complete unit in itself, the Paint Sprayer consists of a spray gun, paint container, a 25-ft air hose, a three-way safety valve, pressure regulator, and a full set of instructions. Plastic-Kote, Inc., Cleveland, Ohio.

P110. Truck Seat

Easy-ride truck seat model, completely self-contained for simple and fast installation, has integral base and back support which requires no special brackets. Does not require

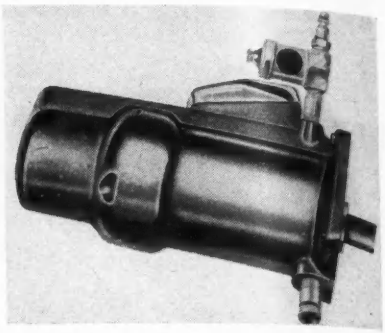


removal of the gas tank at the time of installation.

Featuring sponge rubber cushion and back, new model provides ride cushioning action through a direct-double-action hydraulic shock absorber, and comfort by a variable-rate coil spring accommodating a driver of any weight. Monroe Equipment Co., Monroe, Mich.

P111. Lube Pump

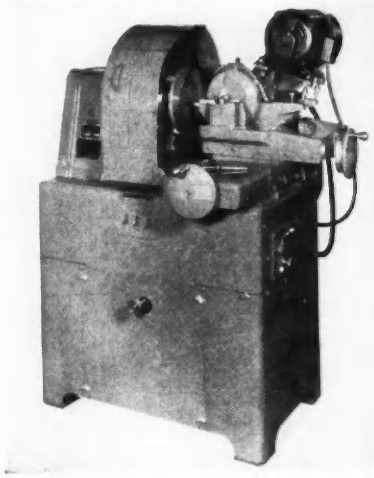
"Jet-Power" Pump delivers a greater volume of any lubricant, at any temperature, at any distance from the source. Light in weight, scaling less than 15 lb, unit features simplicity of design with only 60 parts and 81 pieces in the unit. Does not require manual air bleeding—the air is automatically discharged through the grease control handle. It has a fine mesh grease screen, removable air valve, moulded air nipple screen,



automatic visible oiler, cadmium plated air piston, and full-floating pump rod. Balcrank, Inc., Cincinnati, Ohio.

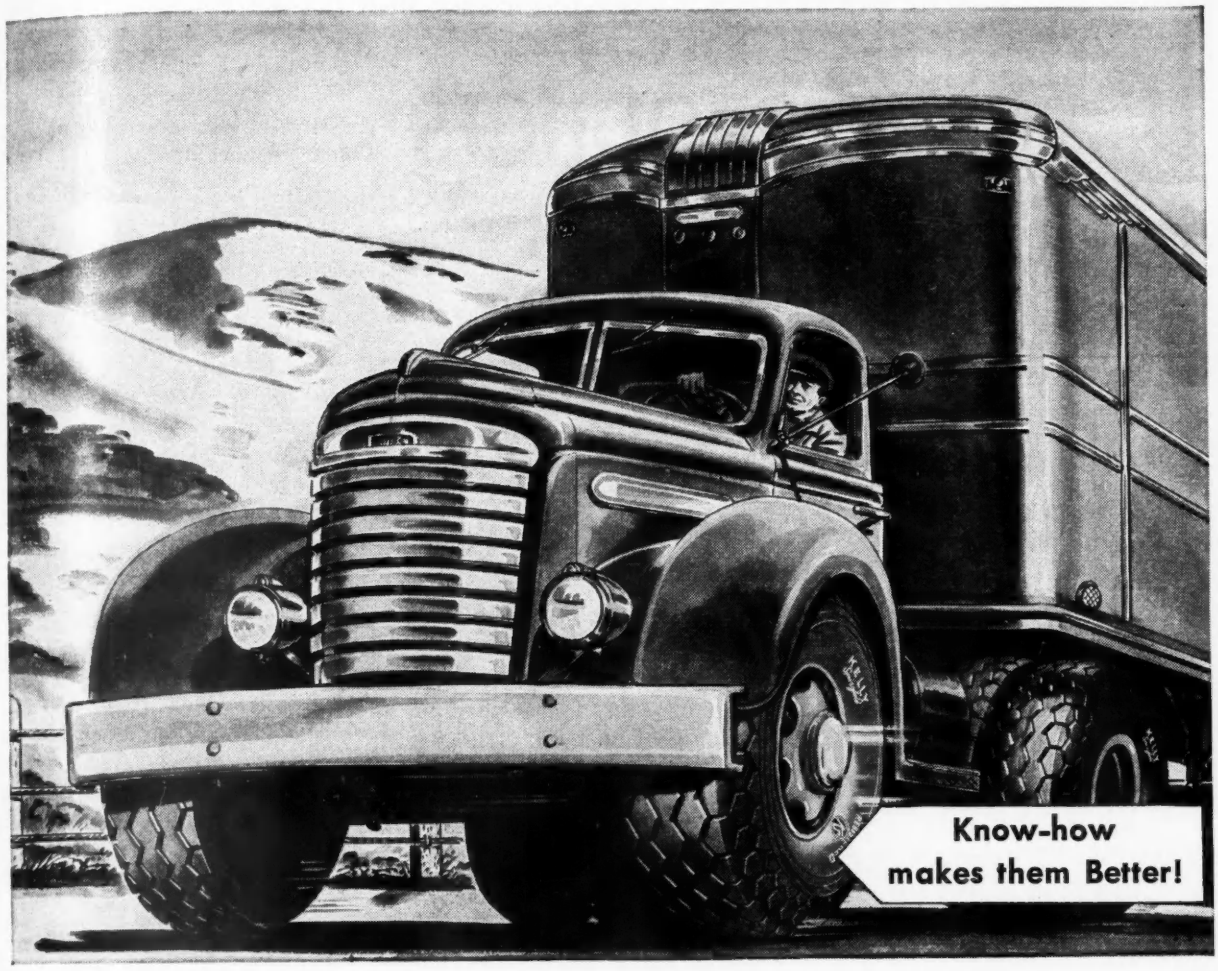
P112. Clutch Plate Grinder

Hydraulically-fed clutch plate and flywheel grinder turns and grinds an 11-in. clutch plate in 68 sec in one continuous operation with no special set-up between operations. Easily set up for various types of clutch plates. Chuck is 18 in. universal geared screw-type, with interchangeable jaws for holding different types of plates. Special attachments for Borg and Beck and long type clutch plates are provided.



For work-head speed control, the variable drive can be adjusted to any desired speed within 80 to 130 rpm. Grinder is mounted on a hardened alloy steel spindle which turns on ball bearings. Grinder speeds are 3000 rpm for 8-in. grinding wheel, 4000 rpm for 6-in. wheel, and 6000 rpm for 4-in. cup wheel used on recessed flywheels. Evans Reamer and Machine Co., New Lexington, Ohio.

(TURN TO PAGE 56, PLEASE)



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And today's Kelly is tougher than ever. Exclusive Armorubber tread actually outwears steel—giving you longer wear . . . extra safety . . . added mileage.

What's more, into each Kelly Trucker's Tire goes the careful workmanship, the *know-how* that have characterized Kelly tire-building for 55 years!

Switch to Kellys on *your* fleet now—and cut your tire costs *on any type of operation.*

THE KELLY-SPRINGFIELD TIRE COMPANY, CUMBERLAND, MARYLAND

KELLY REGISTERED | KELLY COMMERCIAL HEAVY TREAD | KELLY DUAL TRAC | KELLY LUG TRAC | KELLY RIB TREAD | KELLY DELIVERY TRUCK TIRE

A TOUGH KELLY FOR EVERY JOB!

PRODUCTS

(Continued From Page 52)

P113. Power Washer

The Kem-O-Flo Auto-Washer, a portable car washer using a pressure tank and a method for feeding either the wash solution or rinse water as desired from the same rotating wash brush. Pressure tank is used as a mixing chamber and reservoir for the wash compound as well as a means for increasing pressure of the city water supply. Unit consists of the pressure tank, 25 ft of synthetic twin hose, the mixing manifold and rotating brush, and all other necessary hose and connections. Kem-O-Flo Products Co., Detroit, Mich.

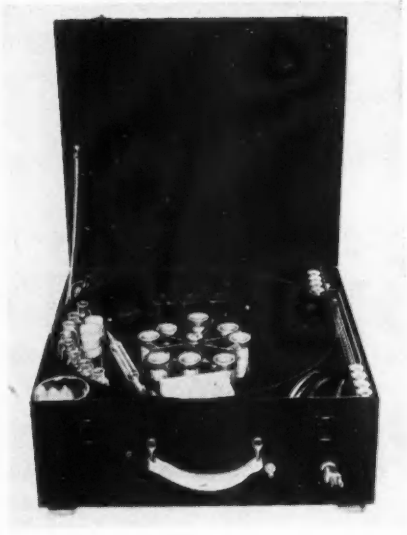
P114. Hydraul-Lift Tailgate

The Cemco Hydraulic Lift Tailgate weighs only 733 lb, providing less dead weight than tailgates. Equipped

with assist springs to make closing easier. Maximum lifting capacity limited only by strength of chassis frame, according to the manufacturer. Designed for installation on truck chassis from ¾ to 6-ton capacity. Cemco Industries, Inc., Galion, Ohio.

P115. Oil Test Kit

Oil testing equipment kit is portable, measures the four dangerous classes of contaminants: 1. Change

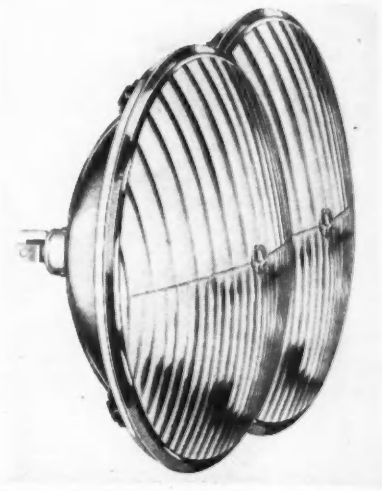


in viscosity due to fuel dilution or other causes. 2. Amount of the asphaltic and other oil breakdown substances considered responsible for deposits. 3. Amount of dirt, metal particles, other solids and water. 4. Acidity, showing whether corrosion is possible.

The oil from four engines can be analyzed for all four classes of contaminants in 25 min, so that changes and trends can be detected which give advance information that mechanical or operating troubles are in the making. Tests are also a necessary guide to making oil and filter changes according to their actual condition instead of according to time or mileage. The Gerin Corp., Red Bank, N. J.

P116. Fog-Beam Unit

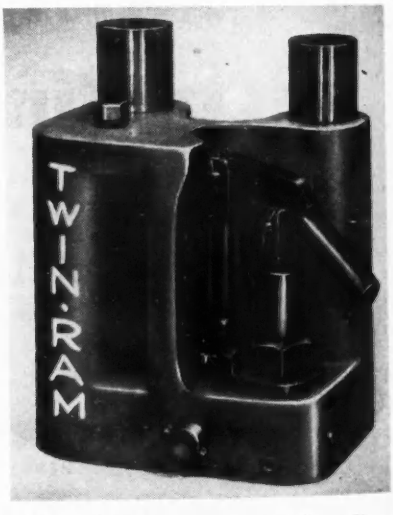
Sealed beam type replacement headlight unit with a triple reflector system of light control used to eliminate all uncontrolled light. Properly



aimed, the Down beam is used not only for dimming purposes, but is also an effective fog light. The driving beam is wide-spread, with a minimum of glare. Both lens and bulb are replaceable. Trippe Mfg. Co., Chicago, Ill.

P117. Twin Ram Puller

This 30-ton twin ram puller features a 5-in. travel, 2-in. diameter jaw capacity, a height of 8½ in. and a weight of 38 lb. Twin cylinders are



said to eliminate torque, side pull or scuffing. Twin rams are self leveling. Side opening of jaw permits instant installation. Swivel operating lever permits many angle hookups.

This unit lifts, pulls, pushes and can be used as a press or straightening bar. Livingston Mfg. Co., South Gate, Cal.

(TURN TO PAGE 148, PLEASE)

THE DOCTOR OF MOTORS Rumor Page

IT'S RUMORED THAT: ***Voltage at your spark plugs is 10 times that of an electric chair!***

True. The voltage of an electric chair is between 1800 and 2200 volts with current of 3 to 4 amperes. But flashes of 20,000 volts jump across the points of your spark plugs.

*Contributed by Robert F. Bahl, Pittsburgh 5, Pa.**

IT'S RUMORED THAT: ***It's the man who buys the car!***

According to a recent survey of 1145 men, 76% said *they* picked the car. When the same question was asked of the women, they agreed! Who'd believe so many wives agreed with their husbands? (Of course we would, Dear!)

IT'S RUMORED THAT: ***Fleet operators know a good thing when they see it!***

Right. And over a thousand fleet operators know what a good thing the Perfect Circle Fleet Survey Plan is. Because this plan, available to you at no cost or obligation, cuts shop time, trims maintenance costs, ups fleet profits. If you're interested in those three things, why not write us and get in on a good thing?

IT'S RUMORED THAT: ***Saturday is now the most dangerous driving day!***

Last year for the first time in history, Saturday became the most dangerous day of the week on the highway. The reason it out-accidented Sunday is the change from the 6-day to the 5-day week. Rather work Saturday . . . or else?

*Perfect Circle pays $50.00 for any Rumor accepted for this page. None can be returned or acknowledged, and all become PC's property. Send yours to Perfect Circle Corporation, Hagerstown 6, Indiana.

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1. Look where the groceries grow!

The American farmer is the world's biggest user of trucks. He depends on reliable, low-cost hauling... so he uses thousands of International Trucks.

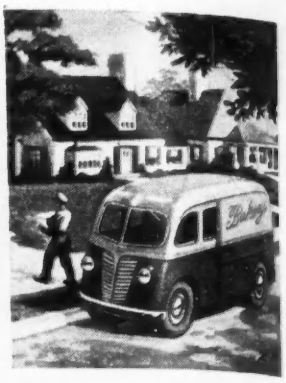
2. Look at the meat fleet!

Many of the trucks that keep meat moving mouthward are International Trucks. They are designed, engineered and built for this particular job by a company that has been building trucks for 42 years.

3. Look how the canning is coming!

A gigantic network of trucking systems places plenty-of-million cans on grocers' shelves.

Many of the trucks in those systems are International Trucks—specialized trucks built to do specialized jobs.



4. Look how the bread rolls!

Families count on daily delivery of the staff of life.

Leading bakeries count on the International-Metro, too. They find that this multi-stop delivery truck slices delivery costs-per-loaf, helps drivers.

It's millions of miles from markets to mouths...

5. So think how many meals-an-hour trucks like this must travel!

Millions eat good food every day only because American industry and commerce pitch in to keep the calories coming.

Our part in that picture is—TRUCKS. All kinds. There are 22 basic International Trucks. There are different engines (gasoline, diesel and butane), wheelbases, axles, transmissions and other components for efficient specialization-of-truck-to-job. Gross weight ratings range from 4,400 to 90,000 lbs.

For trucks to haul food, for trucks to haul *anything*, for trucks that are the "Standard of the Highway," see your International Dealer or Branch.

Other International Harvester Products
Farmall Tractors and Machines
Industrial Power . . . Refrigeration

Tune in James Melton and "Harvest of Stars," CBS, Wednesday evenings

INTERNATIONAL TRUCKS

INTERNATIONAL HARVESTER COMPANY • CHICAGO

FLEET OPERATORS' EXPERIENCE HANDBOOK

Part 3

Most Fleet Operators Refinish Their Trucks

EVERY 2 OR 3 YEARS

Majority of fleets buy new trucks finished to specifications but do own refinishing every 2 or 3 years with enamel. Refinishing job for majority includes undercarriage and inside of body

Analysis **by A. W. GREENE,** *Managing Editor, Commercial Car Journal*

WHEN BUYING NEW TRUCKS, the majority of fleets order their vehicles to be finished according to specifications, as shown in Table 1. For the majority of fleets this takes in everything, including lettering. Of the remaining fleets participating in this survey, 35 per cent have their new vehicles delivered unfinished; 6 per cent sometimes order new trucks to be finished, sometimes unfinished, usually depending on how much work there is in the paint shop at the time the new vehicles are purchased.

As for refinishing, most fleets operate on a definite schedule. As shown in Table 2, these schedules vary from 1 to 3 years; 9.35 per cent refinish every year, 35.03 per cent every 2 years, and 32.24 per cent every 3 years. Of the fleets employing schedules other than those tabulated (23.36 per cent), 3.27 per cent refinish some vehicles every year and some vehicles every 18 months or 2 years, depending on their condition and type of service; 7.01 per cent refinish some every 2 years and some every 3 years; 13.08 per cent report schedules greater than 3 years.

Finishes Used

ENAMEL is the most widely used finish, as shown in Table 3. However, quite a few fleets use more than one finish. They explain this practice by saying that, if the vehicle's original finish was lacquer, the same finish is used for refinishing to avoid sanding down to the bare metal or wood; similarly, if other vehicles in the same fleet have an enamel finish, enamel will be used for refinishing. These fleets are listed in the column headed "Other."

Inasmuch as protective coatings are easier and less expensive to apply than the finish itself, an attempt was made to determine how many fleets used varnish, clear lacquer or polish on their vehicles after and between paint jobs. The result is shown in Table 4. The information tabulated covers only the fleets that report using only one type of finish.

An attempt also was made to determine how frequently the protective coatings were applied. The resulting answers were so varied that tabulation was impractical. The periods reported range from once a month to one case of only once in three years. Segregating the fleets that use polish, quarterly and semi-annual applications predominate.

Parts Refinished

TO DETERMINE how thoroughly, fleets refinish their vehicles, questions asked sought to ascertain if the undercarriage and inside of truck bodies were refinished at the same time as the outside of the body. Table 5

Majority of Fleets Order New Trucks Fully Finished

Q. "Are your new vehicles delivered to you unfinished or finished to your specifications?"

A. 58.88% order new trucks finished to specifications, 35.05% order new trucks unfinished.

Table 1

VOCATIONAL GROUPS	Number of Fleets Reporting	Finished (Per Cent)	Unfinished (Per Cent)	Some Unfinished, Some Finished (Per Cent)
FOR-HIRE CARRIERS	31	41.94	54.84	3.22
FOOD DISTRIBUTION	42	38.10	54.76	7.14
GOVERNMENT	54	76.04	9.26	3.70
CONSTRUCTION	8	87.50	.....	2.50
INDUSTRIAL	3	66.67	33.33	.....
PETROLEUM	7	57.14	42.86	.....
PUBLIC UTILITY	28	71.42	14.29	14.29
RETAIL DELIVERY	25	32.00	68.00	.....
TRUCK RENTAL	8	25.00	62.50	12.50
TRUCK & BUS FLEETS, MIXED	8	87.50	.....	12.50
TOTAL & AVERAGE	214	58.88	35.05	6.07

COMPOSITION OF VOCATIONAL GROUPS as Used in the Accompanying Tables

FOR-HIRE CARRIERS—Local and Over-the-Road Motor Freight Operators.
FOOD DISTRIBUTION—Bakery, Dairy, and Other Food Products fleets.
GOVERNMENT—State, County, Municipal and Federal fleets.
CONSTRUCTION—Builders, Quarries, Gravel fleets.
INDUSTRIAL—Fleets operated by manufacturers.
PETROLEUM—Production and Distribution fleets.
PUBLIC UTILITY—Gas, Power, Water and Telephone fleets.
RETAIL DELIVERY—(Other than Food Products) Dry Cleaning, Laundry, Newspaper, Coal & Ice, Department Store, Beverage fleets.
TRUCK RENTAL—Agencies leasing motor trucks.
TRUCK & BUS FLEETS, MIXED—Passenger carriers operating own trucks.

shows that the majority of fleets include the undercarriage parts in every paint job, and Table 6 shows that the inside of a truck body also is refinished at the same time as the outside by the majority of fleets.

As far as the method of applying the finish, practically all fleets use the spray gun, as shown in Table 7. Fleets using both spray gun and brush report that the brush is used for interiors, undercarriage and certain other parts where masking for spray would take too much time. As for fleets using brush only, the majority explained that present shop facilities were inadequate for spray painting.

Additional details of fleet vehicle refinishing practices will be published in the February issue.

Fleets Refinish Trucks Every Two or Three Years

Q. "How often do you refinish vehicles in your fleet?"

A. 9.35% refinish every year, 35.05% refinish every 2 years, 32.24% refinish every 3 years.

Table 2

VOCATIONAL GROUPS	Number of Fleets Reporting	ONE (Per Cent)	TWO (Per Cent)	THREE (Per Cent)	Other (Per Cent)
FOR-HIRE CARRIERS	31	16.13	38.71	29.03	16.13
FOOD DISTRIBUTION	42	11.90	30.96	40.48	16.66
GOVERNMENT	54	7.40	31.48	37.04	24.03
CONSTRUCTION	8	25.00	62.50	.....	12.50
INDUSTRIAL	3	.....	66.67	33.33	.....
PETROLEUM	7	14.29	71.42	14.29	.....
PUBLIC UTILITY	28	.....	25.00	17.86	57.14
RETAIL DELIVERY	25	12.00	36.00	40.00	12.00
TRUCK RENTAL	8	12.50	37.50	12.50	37.50
TRUCK & BUS FLEETS, MIXED	8	.....	25.00	62.50	12.50
TOTAL & AVERAGE	214	9.35	35.05	32.24	23.36

Many Fleets Preserve Finish with Protective Coatings

Q. "Do you protect the finish with Varnish, Clear Lacquer or Polish?"

A. The majority of Enamel users do not use protective coatings; the majority of Paint users use polish, and majority of Lacquer users use polish.

Table 4

KIND OF FINISH	Protective Coating: Varnish (Per Cent)	Protective Coating: Polish (Per Cent)	No Protective Coating (Per Cent)
ENAMEL	14.07	14.81	71.12
PAINT	21.05	47.37	31.58
LACQUER	23.08 (Clear)	46.15	30.77

How Often is Inside of Truck Body Refinished?

Q. "Do you refinish inside of body at same time as outside?"

A. 61.22% fleets always refinish inside of body when outside is refinished, 19.62% refinish inside every other time or as needed, 19.16% never refinish inside of body.

Table 6

VOCATIONAL GROUP	Number of Fleets Reporting	Refinish with Body: ALWAYS (Per Cent)	Refinish with Body: NEVER (Per Cent)	Every Other Painting or as Needed (Per Cent)
FOR-HIRE CARRIERS	31	58.06	16.13	25.81
FOOD DISTRIBUTION	42	69.05	23.81	7.14
GOVERNMENT	54	48.15	27.78	24.07
CONSTRUCTION	8	50.00	12.50	37.50
INDUSTRIAL	3	66.67	33.33	.....
PETROLEUM	7	71.42	14.29	14.29
PUBLIC UTILITY	28	71.43	7.14	21.43
RETAIL DELIVERY	25	60.00	24.00	16.00
TRUCK RENTAL	8	62.50	7.14	37.50
TRUCK AND BUS FLEETS, MIXED	8	87.50	7.14	12.50
TOTAL AND AVERAGE	214	61.22	19.16	19.62

Most Fleets Use Enamels for Refinishing Trucks

Q. "What type of finish do you use?"

A. 63.08% use Enamel, 12.15% use Lacquer, 8.88% use Paint.

Table 3

VOCATIONAL GROUPS	Number of Fleets Reporting	ENAMEL (Per Cent)	LACQUER (Per Cent)	PAINT (Per Cent)	Other (Per Cent)
FOR HIRE CARRIERS	31	61.29	16.13	9.68	12.90
FOOD DISTRIBUTION	42	76.20	7.14	9.52	7.14
GOVERNMENT	54	50.00	16.67	9.26	24.07
CONSTRUCTION	8	62.50	12.50	12.50	12.50
INDUSTRIAL	3	33.34	33.33	33.33	.....
PETROLEUM	7	85.71	.....	.....	14.29
PUBLIC UTILITY	28	60.72	10.71	10.71	17.86
RETAIL DELIVERY	25	60.00	12.00	8.00	20.00
TRUCK RENTAL	8	75.00	.....	.....	25.00
TRUCK & BUS FLEETS, MIXED	8	87.50	12.50	.....	.....
TOTAL & AVERAGE	214	63.08	12.15	8.88	15.89

Is Undercarriage Refinished at Same Time as the Body?

Q. "Do you refinish undercarriage or wheels at same time body is refinished?"

A. 61.22% refinish undercarriage at same time as body, 30.84% refinish wheels only when body is refinished.

Table 5

VOCATIONAL GROUP	Number of Fleets Reporting	Refinish with Body: Undercarriage (Per Cent)	Refinish with Body: Wheels Only (Per Cent)	Seldom or Never (Per Cent)
FOR-HIRE CARRIERS	31	64.52	22.58	12.90
FOOD DISTRIBUTION	42	61.91	33.33	4.76
GOVERNMENT	54	77.68	12.96	9.26
CONSTRUCTION	8	62.50	12.50	25.00
INDUSTRIAL	3	33.33	66.67	.....
PETROLEUM	7	71.43	28.57	.....
PUBLIC UTILITY	28	35.71	57.14	7.14
RETAIL DELIVERY	25	52.00	44.00	4.00
TRUCK RENTAL	8	75.00	25.00	.....
TRUCK AND BUS FLEETS, MIXED	8	37.50	50.00	12.50
TOTAL AND AVERAGE	214	61.22	30.84	7.94

Most Fleets Apply Finish with Spray Gun

Q. "Do you apply finish with spray gun, brush or cloth?"

A. 89.62% fleets apply finish with a spray gun, 2.36% use a brush, 8.02% use both.

Table 7

VOCATIONAL GROUP	Number of Fleets Reporting	Spray Gun (Per Cent)	Brush (Per Cent)	Spray Gun and Brush (Per Cent)
FOR-HIRE CARRIERS	30	93.34	3.33	3.33
FOOD DISTRIBUTION	41	87.80	4.88	7.32
GOVERNMENT	54	87.04	.....	12.96
CONSTRUCTION	8	87.50	.....	12.50
INDUSTRIAL	3	100.00	.....	.....
PETROLEUM	7	100.00	.....	.....
PUBLIC UTILITY	28	96.43	.....	3.57
RETAIL DELIVERY	25	84.00	8.00	8.00
TRUCK RENTAL	8	87.50	.....	12.50
TRUCK AND BUS FLEETS, MIXED	8	87.50	.....	12.50
TOTAL AND AVERAGE	212	89.62	2.36	8.02

By L. E. Erlewine
Supt., Engine Rebuilding Shop,
Watson Bros., Inc., Omaha, Neb.

Having VALVE Troubles?

Get a lift from an over-the-road fleet which tells how it:

Tests and adjusts hydraulic lifters

Installs seats even when not originally equipped

Determines guide limits

Checks springs and rotation

Speeds up heat change-overs

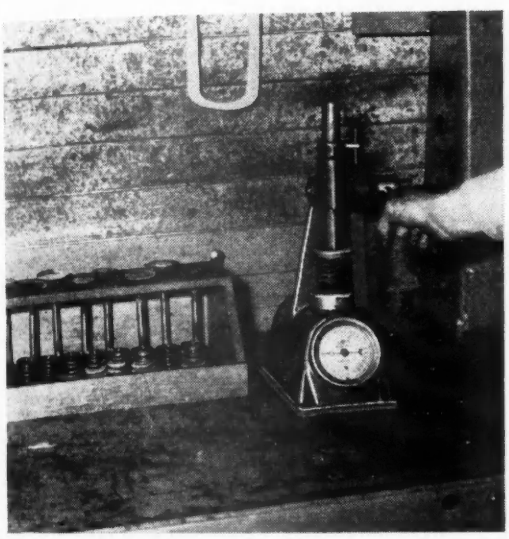


FIG. 1. Valve rack includes space for springs on lower level. All springs are checked on tester

IN COMMON WITH other fleets, particularly those engaged in heavy-duty work, we have had our share of valve troubles and have tried many things to correct the troubles. A few years ago our K-11 engines, for instance, were running around 100,000 miles with little valve trouble. Now we have more trouble in 30,000 miles that we used to have in 100,000 miles using the same tractors on the same routes and in many cases with the same drivers. It was much the same story throughout the fleet.

We obtained an engineering report which blamed most of the trouble on high gum content in the gasoline. The investigation showed that millions of gallons of government owned gasoline in storage had been gradually filtered into commercial channels and that this gasoline was old. Gum content increases in gasoline when it is in storage for a long time. Copper and other metals in the gasoline storage tanks act as catalysts and increase the formation of this gum. This report stated that intake valves took on a heavy deposit of carbon when high gum gasoline was used.

Similarly an unstable lubricating oil, used too long between drains, causes or at least contributes to valve trouble. Dusty conditions and low temperatures increased the assault on the valves.

Naturally we have no control over the quality of the gasoline or even the means to prove that a given quantity of gasoline was at fault. However, most of the other conditions are variables and we determined to give the best valve job we could as a means of counteracting the bad effects of gasoline and operating conditions.

Go No-go Gage for Lifters

OUR procedure for testing and setting hydraulic valve lifters is an example of these efforts and it has paid good dividends.

Since the working range of the hydraulic lifter is limited, it is possible to have a combination of short valve stems and/or worn lifter with a clearance too great for the lifter. The opposite condition can result from interchanging and repairing valves wherein the clearance would be less than desirable. There should be enough clearance when the hydraulic valve lifter is installed to allow it to

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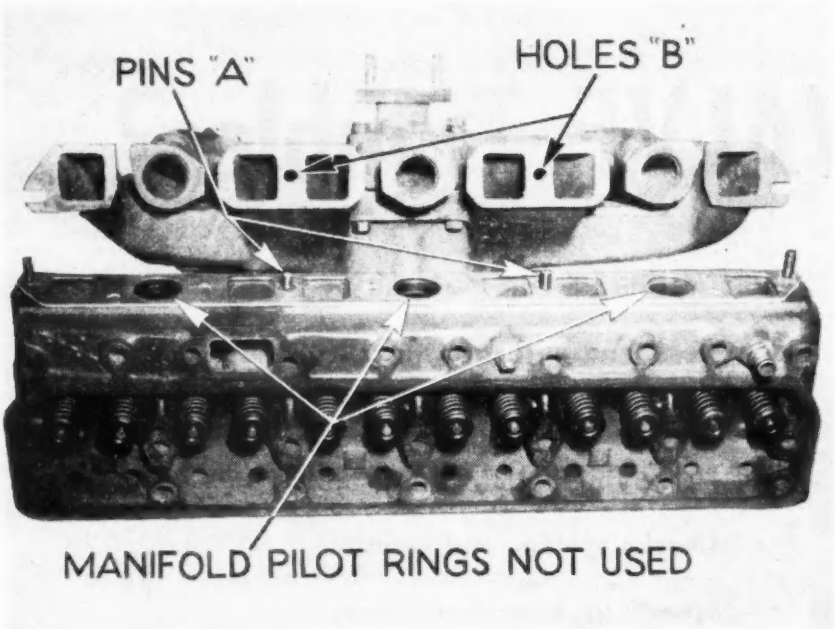
Having VALVE Troubles?

Continued from Page 67

REPLACING OVERHEAD VALVE HEAD IN 45 MIN.



Keys to fast head changeovers are tapered dowels "A" in head and holes "B" drilled in manifold. Together they eliminate need for pilot rings "C"

ANYONE who has replaced a head on an overhead valve engine while hot and at the same time has discovered that the hot manifold is slightly distorted and doesn't fit the pilot rings, will appreciate the fact that we can make this change in our shop in 45 minutes or less.

Since it is easy to use up 45 minutes trying to find out why a manifold doesn't fit, this speed-up takes on added importance. From the "keep them running" standpoint of freight-line service it means that a tractor can get a new head installed with valves in perfect condition, while the driver is getting a cup of coffee.

We have eliminated replacement of the manifold pilot ring entirely when we exchange heads on our overhead valve engines by substituting two dowel pins (A on photo at left) on which to hang the manifold.

The standard version of this particular manifold is only supported during installation by a bolt at each end, except for the support afforded by the pilot

FIG. 2. Metal work table is fitted with drill press (right) for cutting heads for seat insert and special hydraulic rig for pressing seats into place

provide zero lash in a range from zero to .080 in.

To be sure we had the proper clearance for the hydraulic valve lifters after they had been removed from the engine for checking and replacement, we made two gages from two K-5 regular valve lifters (Fig. 4). We adjusted one, the "Go" gage to a clearance of .040 and the other, or the "No Go" gage to a clearance of .080 in. ("Go" length overall, 3.605 in.; "No Go" overall 3.645 in.).

With these two gages we check the clearance between the cam and the end of the valve stem before we install the hydraulic lifters.

Using these two gages we have a quick way of ascertaining whether we have too little or too much clearance for the range of the hydraulic lifters be-

rings in each port, if these pilot rings are not replaced there is no support of the manifold weight through the center. It is extremely difficult to replace the pilot rings when making a change with a hot engine; virtually impossible when the manifold has warped.

Here's what we did in our shop to remedy the situation. Using a manifold gasket as a template we located two tapered dowel pins in the head. One is located between cylinders 2 and 3 and the other pin is located between cylinders 4 and 5. We drilled holes at these points just deep enough to catch two or three threads of a 3/8-inch standard stud. These were made shallow so as not to drill through into the water chamber, although to go through into the water would have given no bad results. Since the stud is screwed into the hole it would not have entailed any leaks. The tops of these studs are tapered slightly and rounded so as to guide the installation of the manifold.

In the manifold we drilled holes to receive these studs at the same spots and then elongated the hole horizontally to allow for contraction and expansion in service. The two ends of the manifold are already slotted in the same manner for the end studs which support and hold the manifold against the head.

In making a change the mechanic removes the manifold and head. He sets new head in position and when ready to pull manifold up merely hangs it on the two dowel pins and two end studs, checks gasket for placement and pulls up the nuts and the job is done.

By this method we have not only reduced our shop time in making head changes, but we have also reclaimed more than 100 manifolds from all over the system which had been discarded because of distortion or warp. We have had universally good results and not a single failure.

As a consequence all manifolds in stock have now been reworked in according to this plan and all replacement heads have been similarly altered.

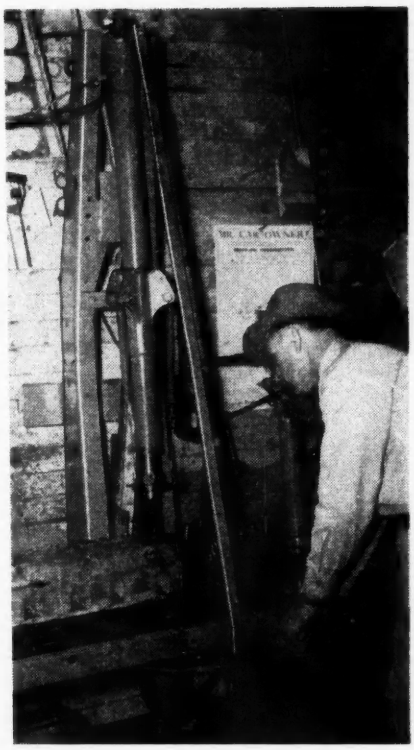
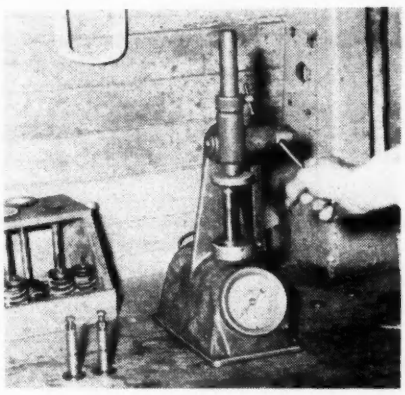


FIG. 3. Close up of hydraulic press for seating valve inserts. It is made from a salvaged airplane wing jack

FIG. 4 Valve lifters, set for .040 and .080 in. clearance, make convenient Go and No-Go gages for checking operation of hydraulic lifters



fore the hydraulic lifters are reinstalled in the block. This eliminates call backs from valve trouble caused from long or short stems or any condition that would result in abnormal clearance for the hydraulic lifters.

Testing Hydraulic Lifters

EVEN with the most exacting adjustments hydraulic valve lift equipment can easily run into trouble. Some of ours seemed so elusive that we couldn't seem to blame it on the hydraulic equipment until we evolved a test for hydraulic lifts to determine if they were worn or lazy. We found that a surprising number of them were just lazy and needed cleaning.

To test hydraulic valve lifters we use our regular valve spring tester.

We fill the lift with kerosene and impose a 50-lb load according to the spring tester dial. If the leakdown rate is correct the lifter will drop 1/4 in. under this load in not less than four seconds. Any lifter that does not do this must be replaced or repaired.

The plunger must be free in the bore but not loose. If it is loose it will hardly hold up under kerosene at all. At the time the lifter is out it should be examined for wear on the plunger body at the shoulder.

Since running our hydraulic lifters through this test after routine cleaning and servicing we have eliminated virtually all troubles from lazy or defective lifters.

Guide Limits

WE scrutinize valve guides and throw them out if worn or bell-mouthed. Then we carefully maintain factory clearances on stems. This is highly important because the alignment of the valve is maintained by the guide. A general safe clearance for stems in the guide is .001-in. clearance per 1/8-in. stem diameter for exhaust valves and .001-in. clearance per 3/16-in. stem diameter for intake valves.

(TURN TO PAGE 176, PLEASE)

Patrolling

The Mason and Dixon Line

Fleet's four-man safety patrol renders first aid and mechanical assistance to all, keeps company drivers in line with rigid safety rules and builds good will for sponsors

By A. Ewing Greene
Vice-president, Mason and Dixon Lines, Inc.
Kingsport, Tenn.

THE MASON AND DIXON LINES, INC.

Safety Department Observation Report

Date_____ 194_____ Time_____ A.M._____ P.M._____
Tractor No._____ Trailer No._____ Truck No._____
Driver_____ Direction_____
Where operation of unit was checked _____

Miles Trailed_____ Speed Range_____
HIGHWAY: Smooth_____ Rough_____ Slippery_____ NO. Lanes_____
WEATHER: Rain_____ Snow_____ Fog_____ Clear_____
VEHICLE: Lights_____ Alignment_____ Tail Gate_____ Tires_____

OPERATING VIOLATIONS

Failure to observe STOP SIGN_____ Parking Improperly_____
Failure to observe Warning sign_____ Turning Improperly_____
Failure to observe Traffic Signal_____ Following too closely_____
Failure to Stop or Slow Down at Drawbridge_____ Weaving_____
Failure to Stop or Slow Down at Railroad Crossing_____
Failure to use: Torches_____ Flags_____ Fusees_____
Passing Improperly: Hill_____ Curve_____ Straight Away_____
Other Violations:_____

Safety Supervisor

Safety Supervisors' report form, used for general or specific comments, has space for pertinent data

PROBABLY the most important phase of Mason and Dixon's multi-point highway safety program is our four-car highway patrol of safety supervisors.

While safety work and accident prevention is their first duty, the results of their efforts have reached into the realm of good public relations. Besides attending to our own safety business, these highway safety patrols render aid to other truckers and to the general public when necessary. They have assisted hundreds of motorists stranded on the highway; they have rendered first aid; they have called ambulances and fire departments for people we did not know; and they have cooperated with city, county, and state police authorities. One of our supervisors answered a fire call to a private residence along the highway and extinguished the blaze with his large CO-2 fire extinguisher which is regular equipment on safety cars.

Supervisors Are Old Hands

WE patrol our entire system from Atlanta to New York with a fleet of four highway safety cars. Each car is driven by a safety supervisor who has been trained in safety and emergency work. Most of them have had more than ten years' experience as over-the-road drivers for Mason and Dixon Lines. They are intimately acquainted with the fine points of

Safety Patrol car carries first aid and full emergency equipment as well as some spare parts for minor repairs

professional truck driving and the general habits of the truck driver, and they have been specially trained in safety work, emergency work, and trouble shooting on stalled trucks.

Each safety supervisor is assigned to a specific territory but his movements and coverage of the territory is so subject to constant change that the rank and file of truck drivers can never be exactly sure where he is. Supervisors are also rotated around the regular district so they may become familiar with conditions in all parts of our system.

If we have any unusual number of accidents in any one locality, we move all of our supervisors in immediately to make corrections that will eliminate the accidents.

Duplicate reports of instances in which trucks are tailing each other too closely, drivers congregating at one spot, drivers waiting for other drivers to overtake them, and other violations of our rules, will soon bring the entire safety fleet down upon them.

Each safety supervisor's territory overlaps somewhat with that of the other supervisors. The four districts are:

Eastern District: New York, Pennsylvania, New Jersey and Maryland.

Headquarters District: Tennessee, Virginia, and North Carolina.

Middle District: West Virginia and Virginia.

Southern District: Georgia and the balance of Tennessee not covered by Headquarters District.

It would be foolish to have a safety supervisor rush to the scene of an accident if he were not properly equipped to cope with any situation that might arise. We have tried to think of almost every contingency in equipping our safety cars and so far we are proud of the record they have turned in.

Each car is equipped with a large first aid kit and two fire extinguishers. One is a quart-size hand-type extinguisher, and the other is the large type of CO-2 extinguisher capable of extinguishing a truck fire, airplane fire or a small house fire.

Each car has a large portable electric lantern, a portable extension light that can be attached to car or truck battery, and a good supply of hand flashlights. There is also a heavy-duty hydraulic jack capable of raising a truck or a loaded trailer. For the protection of damaged cargo

(TURN TO PAGE 164, PLEASE)

Shop hints from FLEET SHOPS

$25 FOR THE BEST HINT PUBLISHED EACH MONTH . . .

$5 FOR ALL HINTS PUBLISHED EACH MONTH

Here's the Way to Win . . .

. . . And you don't even have to listen to a radio program with Pop eating Crunchies. Just turn your radio OFF when you go home tonight. Get out a pencil and paper and jot down one of the several short cuts you have used today. Or give us a short-short on that special tool you developed recently.

It may bring you $5, and there's a good chance to make the Hint of the Month. Here is a way to make back some of that moola you lost on the Christmas spending spree.

1. Brake Fluid Filler

by G. E. Upperman, Garage Supt.
Continental Baking Co.
Wheeling, W. Va.

This is an improvement on a hydraulic fluid ball. A baby buggy style handle is provided from 3/8-in. CR steel threaded at the lower end and bolted to braces attached to the bottom frame of the filler. A metal box is fitted between the handles and this is drilled to take all adapters and hoses used with the filler. A pad is laid in the bottom of these holes to catch drippings from hoses or adapters.

This modification eliminates having to bend over when wheeling the unit back and forth.

2. Surface Scraper

by Frank Coulomb
Inglewood, Calif.

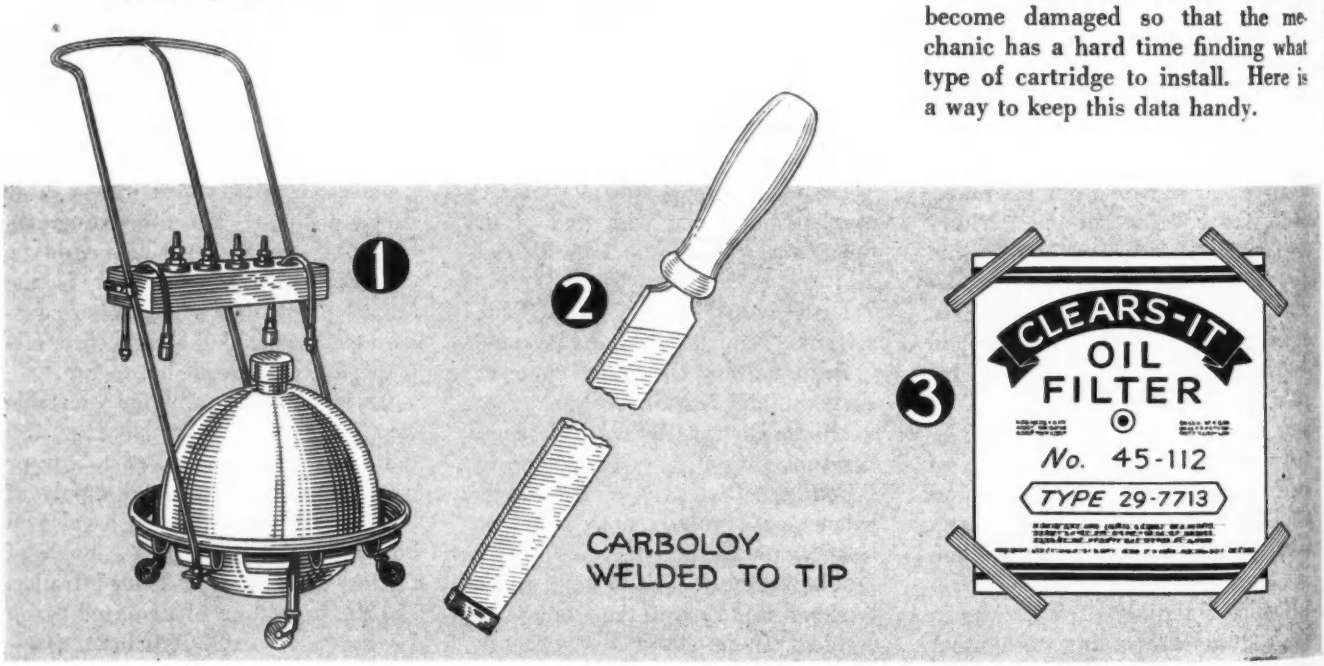
Here is a dandy surface scraper for leveling castings, overhauling of machinery and general truck maintenance.

Silver solder or braze a piece of carboloy to the end of a 14-in. file as shown in the drawing. Thus the tool can be used for either a file or scraper, and the sharp scraper is always handy.

3. Oil Filter Tip

by George Favinger
State Roads Commission
Easton, Md.

Sometimes the labels on oil filters become damaged so that the mechanic has a hard time finding what type of cartridge to install. Here is a way to keep this data handy.



Cut the top from the cardboard box of the new cartridge and stick it to the under side of the hood with masking tape. Next time the unit is changed, the mechanic can tell at a glance the part number of the replacement.

4. Water Pump Repair

by A. L. Lord
Director Winters Transport
Toronto

Packless water pump bodies can be salvaged. The seal surface usually needs reconditioning. This can be done by setting the pump body on a drill press. Place a ⅜-in. valve in the chuck and put a fine grinding compound on the seat. Turn valve in press at moderate speed with light pressure. Use an oil with the compound as the work progresses, to speed the cutting. The seat will soon become polished and smooth and will provide a seal like new. We use IHC D50 valves for this tool.

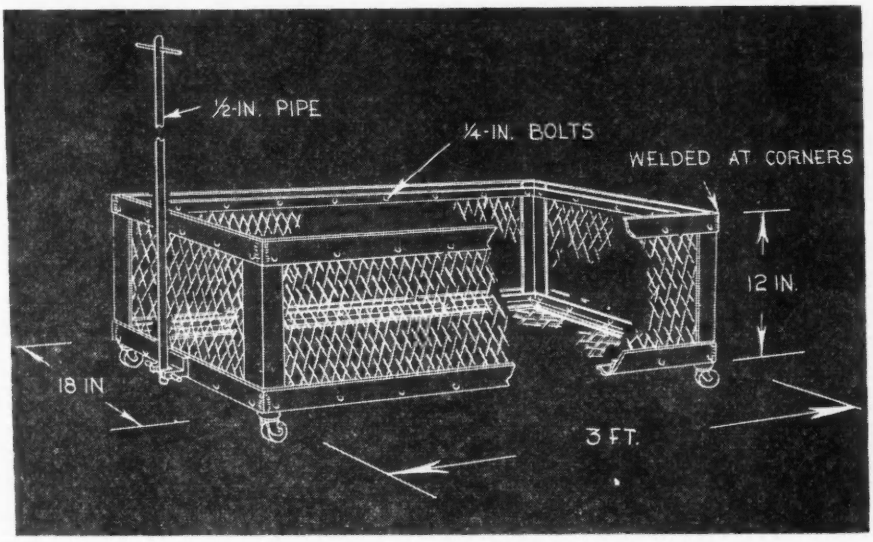
5. Welding Fixture

by Frank Coulomb
Inglewood, Calif.

This handy V block for welders is used when welding rod ends.

Jig can be made in any shop. You need a piece of square metal stock 2 x 2½ x 7 in. cut out and notched to the dimensions shown in the drawing. Clamps are made with strap iron, drilled at the ends to take ¼-in. studs and threaded at the center to take a ¼-in. wing bolt. A nut welded to the top of this U-shaped clamp will help to thread the bolt to hold the rod in position.

$25 Hint of the Month ★

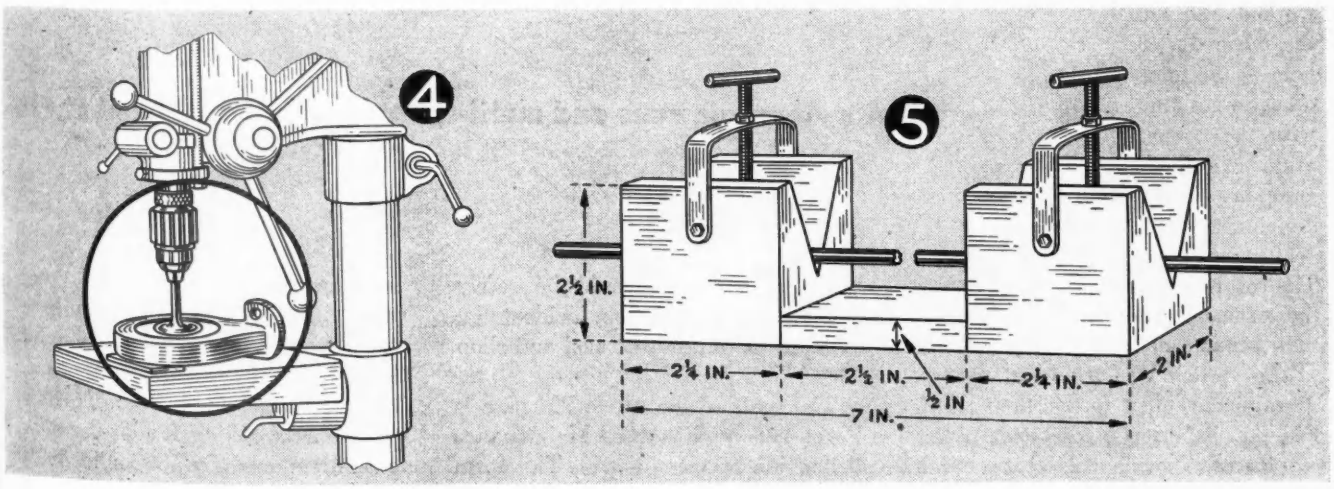


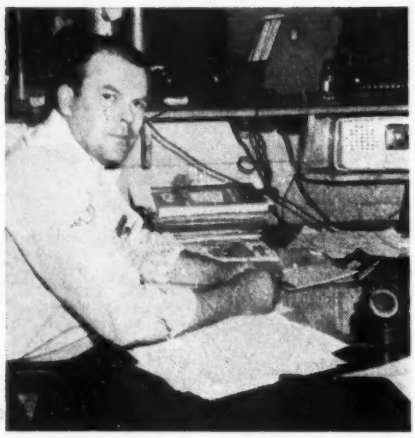
Steam Cleaning Cart

by E. W. Nagel
International Harvester Co., Long Beach, Cal.

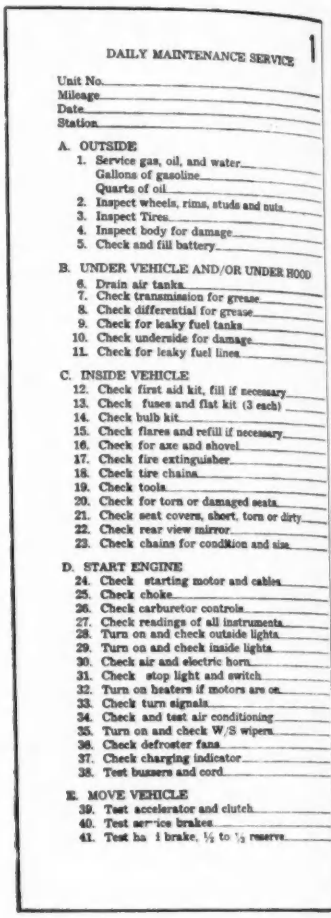
Here is a home-made cart we use to carry dirty parts from service jobs to the steam room. This type of cart saves a great deal of time and eliminates losing small parts since they are simply left on the wire floor and cleaned while loaded. They dry quickly as all water can drain off easily.

The diagram will show dimensions and construction. Body of cart is made of hurricane fencing, reinforced with 2-in. angle iron at the top, bottom and corners. The angle iron is welded to form a box 3 ft. long, 12 in. high and 18 in. wide. A ½ x 36-in. water pipe is welded to the front bottom for a handle, and 2-in. casters are fastened to the four corners for wheels.





Harry A. Littlecott, superintendent of Maintenance, Rio Grande Motor Way


DAILY MAINTENANCE SERVICE 1

Unit No.
Mileage
Date
Station

A. OUTSIDE
1. Service gas, oil, and water
Gallons of gasoline
Quarts of oil
2. Inspect wheels, rims, studs and nuts
3. Inspect Tires
4. Inspect body for damage
5. Check and fill battery

B. UNDER VEHICLE AND/OR UNDER HOOD
6. Drain air tanks
7. Check transmission for grease
8. Check differential for grease
9. Check for leaky fuel tanks
10. Check underside for damage
11. Check for leaky fuel lines

C. INSIDE VEHICLE
12. Check first aid kit, fill if necessary
13. Check fuses and flat kit (3 each)
14. Check bulb kit
15. Check flares and refill if necessary
16. Check for axe and shovel
17. Check fire extinguisher
18. Check tire chains
19. Check tools
20. Check for torn or damaged seats
21. Check seat covers, short, torn or dirty
22. Check rear view mirror
23. Check chains for condition and size

D. START ENGINE
24. Check starting motor and cables
25. Check choke
26. Check carburetor controls
27. Check readings of all instruments
28. Turn on and check outside lights
29. Turn on and check inside lights
30. Check air and electric horn
31. Check stop light and switch
32. Turn on heaters if motors are on
33. Check turn signals
34. Check and test air conditioning
35. Turn on and check W/S wipers
36. Check defroster fans
37. Check charging indicator
38. Test buzzers and cord

E. MOVE VEHICLE
39. Test accelerator and clutch
40. Test service brakes
41. Test hand brake, ½ to ⅓ reserve

FIG. 1 Rio Grande's Form 400 is back bone of whole PM system. In book form with staggered pages (see sketch above), it contains the five sheets illustrated at right. Entire form travels with unit in special container. Glance at recap (page 5) tells all concerned just what inspections have been made. All forms are standard 8½ x 11 in.

Rio Grande Scale PM

Fleet's mountain runs and multi-shop setup require perfect PM

By John K. Graves

THE RIO GRANDE Motor Way, with headquarters in Denver, expects and gets extraordinary service from its PM system. For one thing it costs two cents per mile above average cost to make its mountain hauls. For another, nobody especially likes making an emergency repair on an 11,000-ft mountain in a snowstorm at midnight.

The company's present PM plan reflects this policy. Harry A. Littlecott, supervisor of maintenance, was the guiding genius but the plan was worked out with the benefit of help from many other lines and with the cooperation of all the company's subdivision mechanical supervisors. The resulting plan is so complete that the service of a traveling maintenance man became no longer necessary.

The system was tried out at first on mimeographed forms, then modified as experience dictated. After months of experimentation it was felt that certain forms could be safely printed—on heavy stock, incidentally, to stand the abuse of travel and shop usage.

The basis of the whole PM plan is Form 400 which is titled Maintenance Inspection Service (Fig.1). This form is a permanent fixture of every unit, riding with the vehicle in a metal form holder on the inside of the right-hand door. As will be noted, it is a multiple sheet form, the staggered sheets calling for all the work to be done on daily 1500-mile, 4500-

RECORD OF MAINTENANCE INSPECTION SERVICES PERFORMED ON UNIT NO. 338 — 5

All maintenance services performed on this unit must be entered on this sheet.

DAILY		DAILY		1500 MILE		4500 MILE	
Date	Mileage	Date	Mileage	Date	Mileage	Date	Mileage
6/25	34145			6/23	32995	6/25	34145

1500 MILE MAINTENANCE SERVICES — 2

Unit No.
Mileage
Date
Station

LUBRICATION

1. Steering knuckle and pin
2. Thrust bearing and pins
3. Differential housing
4. All chassis fittings
5. All service brake fittings
6. Hand brake
7. Water pump and fan
8. Spring shackles and pins
9. Springs
10. Shock absorbers
11. Carburetor controls
12. Drag links
13. Steering gear assembly
14. Transmission controls
15. Transmission case
16. Drive shaft

Note: Clutch bearing is not lubricated on 1500 mile inspection

17. Clean differential breather
18. Clean oil filter
19. Clean crankcase air breather
20. Clean air cleaner
21. Clean metallic element (Diesels only)
22. Blow out blower box drains (Diesels only)

MECHANICS

23. Inspect steering arms
24. Inspect steering assembly
25. Inspect bumpers
26. Inspect license plate and mountings
27. Inspect hub caps
28. Inspect wheels
29. Check front wheel alignment
30. Inspect hangar brackets
31. Inspect shackles and pins
32. Inspect spring bolts and stubs
33. Inspect springs and shock absorbers
34. Inspect differential housing
35. Inspect and test transmission
36. Inspect exhaust and tail pipe
37. Inspect gas tanks and fuel lines
38. Inspect muffler and hangar bracket
39. Inspect drive shaft and universal joints

BRAKE SYSTEM

40. Inspect brake shoes, springs, foller and pins
41. Inspect hand brake and test
42. Check brake chambers, mountings and parts
43. Test brake valve
44. Check air compressor, drive & mounting
45. Check brake drums and brake hoses
46. Check air lines and fittings
47. Check quick release, relay and safety valves
48. Inspect air tanks, valves and gauges
49. Check and adjust slack adjuster

1500 MILE MAINTENANCE SERVICES (Contin. 3

50. Inspect fan, mounting and drive
51. Check water pump and radiator hose
52. Check radiator and mounting parts
53. Check and lubricate shutters and controls
54. Check engine mountings and manifolds
55. Check and test clutch controls
56. Check doors and controls and test
57. Lubricate speedometer adapter and drive
58. Inspect instrument panel
59. Inspect regulator
60. Inspect battery, cables and mountings
61. Check ignition circuits and spark plugs
62. Check and test fuses
63. Check and lubricate heater and ventilator motors
64. Check and clean strainers and filters
65. Check reverse solenoid
66. Check and test choke and fuel pump

3000 MILE MAINTENANCE SERVICES FOR DIESEL UNITS

OR

4500 MILE MAINTENANCE SERVICES FOR GASOLINE UNITS

Unit No.
Mileage
Date
Station

1. Lubricate clutch bearings (with hand gun)
2. Clean Air compressor air cleaner
3. Replace oil filter element
4. Change oil
5. Clean fuel filters (Gasoline units only)
6. Clean sump screens

MECHANICS

7. Check axles
8. Test axle and wheel alignment. Adjust if necessary
9. Test steering assembly
10. Lubricate shock absorbers and repair, if necessary
11. Test wheel bearings
12. Check spindle bushings
13. Check wheel bearing oil seal
14. Check brake spider
15. Check and lubricate accessory units driver
16. Check universal joints
17. Check drive line carrier bearing
18. Test, lubricate and adjust door and controls
19. Clean air separator
20. Check and test service brake lining
21. Check and test parking brake lining
22. Test brake valve
23. Inspect brake cams
24. Inspect air governor
25. Check air lines and fittings, repair if necessary
26. Check and adjust slack adjusters
27. Check clutch bearing

4500 MILE MAINTENANCE SERVICES (Continued) 4

28. Check injector rack settings (Diesel)
29. Check tappet clearance
30. Lubricate and adjust distributor
31. Adjust, clean and test spark plugs
32. Check and test directional turn signals

18,000 MILE MAINTENANCE SERVICES

Unit No.
Mileage
Date
Station

1. Paint where necessary
2. Clean all seats
3. Lubricate clutch controls
4. Clean fuel filter (Diesel units only)
5. Clean blower air intake screen (Diesels only)
6. Drain and refill transmission — 20000 — 5/26 — 27042
7. Drain and refill differential
8. Check and repair side and roof panels
9. Check and repair interior panels
10. Check and repair all seats
11. Check and repair grab rails and steps
12. Check and repair window glass and ventilators
13. Reline brakes, if necessary
14. Flush radiator
15. Pull wheels, inspect, and repack bearings
16. Change fuel filter (Gasoline units only)
17. Adjust and repair carburetor
18. Test and repair fuel pump
19. Adjust and repair governor
20. Adjust timing
21. Inspect timing chains (ACF's only)
22. Adjust valves, and lifter parts
23. Check tappet clearance
24. Check engine supports & tighten all engine bolts
25. Clean oil cooler
26. Clean oil pan screen
27. Test, adjust, and repair regulator
28. Test and repair battery, cables and mountings
29. Check and test coil and condenser
30. Recondition distributor
31. Lubricate, test and repair generator
32. Test and repair starting motor and cables
33. Test and adjust headlights

Here's the complete story with details of mechanical history form which travels with units

mile, 18,000-mile inspections, etc., the items applying to diesel as well as gasoline units. The last page is a recap showing when and where each inspection was made.

Prior to adoption of Form 400 this company had a separate sheet for each maintenance service, a system which soon filled files and resulted in an unusual amount of paper work for the mechanics. Since the form goes with the unit, the service manager at any point is able to instantly check just how that unit stands in the way of needed service, what serviceman or mechanic performed the last service or repairs and at what mileage.

Form 406 (Fig. 2, p. 76) is a daily insert to Form 400. The four col-

(TURN TO NEXT PAGE, PLEASE)

Rio Grande Scale PM

Continued from Page 75

umns on the front correspond to the staggered sheets in the master form and provides shop foremen with a means of quickly checking all inspections due and of recording all work completed. The reverse side contains space for recording additional work needed and is used as a shop order. When all work is finished and Form 406 fully initialed, it is mailed to headquarters every day, thus providing the headquarter's superintendent with a complete record of all work accomplished on every vehicle.

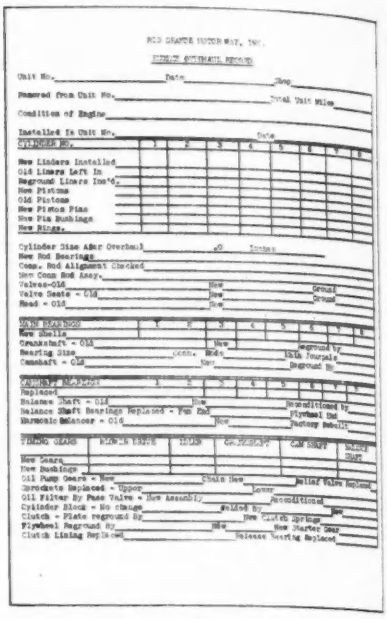
Supplementing the above is Form 317 (Fig. 3) called "Fuel Record and Drivers Trouble Report," and usually referred to as the "cab card." It is also carried with the unit. The company credits drivers with knowing more about the performance of a unit than anyone else, so drivers' reports are a vital part of its system.

After each trip the serviceman removes Form 317, records fuel and oil intake, determines the mileage on the unit, notes deficiencies written in by the driver and transfers them to Form 406, then installs a new cab card, being careful to show total mileage on the new card.

Overhaul Procedures

IN addition to the regular mileage inspections, rings and bearings are checked at 50,000 miles, usually again at 75,000, and again at 100,000. As the unit approaches the 100,000-mile point, all phases of maintenance and inspection become of necessity much more severe. The engine is closely checked for performance at the end of each trip. If it is found, however, that it is still performing satisfactorily, it is continued in operation until it shows some definite sign of need for overhaul. By this method Rio Grande partially offsets their extra operation costs occasioned by mountains, for now and then a unit will turn in a 150,000-mile performance, and every extra thousand miles obtained is mighty important.

As each engine is torn down exacting records of its condition are kept on special forms. Detailed forms are available for transmission, differential, blower and engine proper (Figs. 5, 6, 7 and 8). The engine form, for instance, shows such items as old parts, new parts, size of pistons, sleeves and bearings and the tolerances and clearances with which the engine is set up. These forms then become a permanent part of the unit record, which is filed in the office of



RIO GRANDE MOTOR WAY, INC.

ENGINE OVERHAUL RECORD

Unit No. _____ Date _____ Shop _____

Removed from Unit No. _____ Total Unit Miles _____

Condition of Engine _____

Installed in Unit No. _____ Date _____

CYLINDER NO. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8

New Liners Installed
Old Liners Left In
Reground Liners Ins'd.
New Pistons
Old Pistons
New Piston Pins
New Pin Bushings
New Rings

Cylinder Size After Overhaul _____ .00 Inches

New Rod Bearings
Conn. Rod Alignment Checked
New Conn Rod Assy.
Valves-Old _____ New _____ Ground
Valve Seats - Old _____ New _____ Ground
Head - Old _____ New _____

MAIN BEARINGS | 1 | 2 | 3 | 4 | 5 | 6 | 7

New Shells
Crankshaft - Old _____ New _____ Reground by _____
Bearing Size _____ Cont. Wide _____ Main Journals _____
Camshaft - Old _____ New _____ Reground No. _____

CAMSHAFT BEARINGS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8

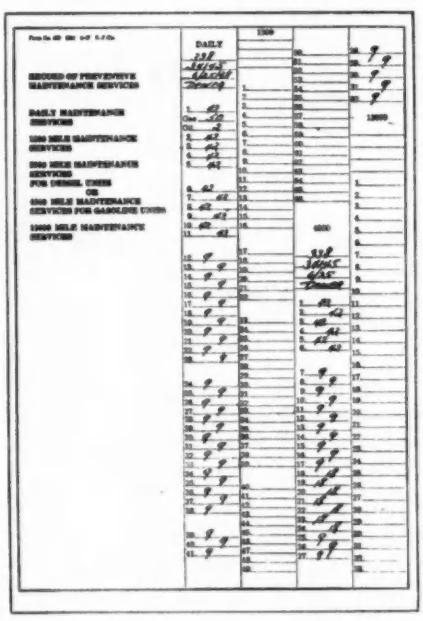
Replaced
Balance Shaft - Old _____ New _____ Reconditioned by _____
Balance Shaft Bearings Replaced - Fan End _____ Flywheel End _____
Harmonic Balancer - Old _____ New _____ Factory Rebuilt _____

TIMING GEARS | CRANK GEARS | IDLERS | CAM GEARS | CAM SHAFT | BALANCE SHAFT

New Gears
New Bushings
Oil Pump Gears - New _____ Chain New _____ Relief Valve Replaced _____
Sprockets Replaced - Upper _____ Lower _____
Oil Filter By Pass Valve - New Assembly _____ Reconditioned _____
Cylinder Block - No change _____ Relined By _____
Clutch - Plate reground by _____ New Clutch Springs _____
Flywheel Reground By _____ New _____ New Starter Gear _____
Clutch Lining Replaced _____ Release Bearing Replaced _____

FIG. 5 Engine overhaul record gives complete specifications on new parts

FIG. 2 Form 406 is daily report of work done. Back side is work order



DAILY

RECORD OF PREVENTIVE MAINTENANCE SERVICES

DAILY MAINTENANCE SERVICES

1000 MILE MAINTENANCE SERVICES

2500 MILE MAINTENANCE SERVICES FOR DIESEL UNITS OR

4500 MILE MAINTENANCE SERVICES FOR GASOLINE UNITS

12000 MILE MAINTENANCE SERVICES

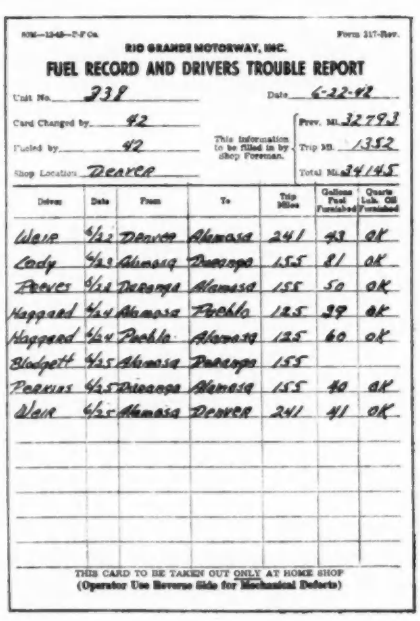
1000

2500

4500

12000

FIG. 3 Form 317 accounts for daily mileage and gas and oil consumption



80M—1248—7-F Co. Form 317-Rev.

RIO GRANDE MOTORWAY, INC.

FUEL RECORD AND DRIVERS TROUBLE REPORT

Unit No. 738 Date 6-22-42

Card Changed by 42 Prev. Mi. 32793

Fueled by 42 This information to be filled in by shop Foreman. Trip Mi. 1352

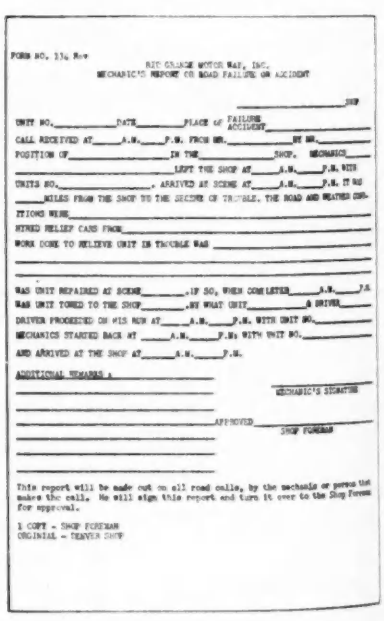
Shop Location Denver Total Mi. 34145

Driver	Date	From	To	Trip Miles	Gallons Fuel Furnished	Quarts Lub. Oil Furnished
Weir	6/22	Denver	Alamosa	241	43	OK
Cody	6/23	Alamosa	Durango	155	81	OK
Denver	6/24	Durango	Alamosa	155	50	OK
Haggard	6/24	Alamosa	Pueblo	125	39	OK
Haggard	6/24	Pueblo	Alamosa	125	60	OK
Blodgett	6/25	Alamosa	Durango	155		
Perkins	6/25	Durango	Alamosa	155	40	OK
Weir	6/26	Alamosa	Denver	241	41	OK

THIS CARD TO BE TAKEN OUT ONLY AT HOME SHOP

(Operator Use Reverse Side for Mechanical Defects)

FIG. 4 Road failure report furnishes full details, is later checked at Hq.



FORM NO. 114 Rev

RIO GRANDE MOTOR WAY, INC.

MECHANIC'S REPORT ON ROAD FAILURE OR ACCIDENT

_____ SHOP

UNIT NO. _____ DATE _____ PLACE OF FAILURE OR ACCIDENT _____

CALL RECEIVED AT _____ A.M. _____ P.M. FROM MR. _____ BY MR. _____

POSITION OF _____ IN THE _____ SHOP. MECHANIC _____

_____ LEFT THE SHOP AT _____ A.M. _____ P.M. WITH

UNITS NO. _____. ARRIVED AT SCENE AT _____ A.M. _____ P.M. IT WAS

_____ MILES FROM THE SHOP TO THE SECURE OF TROUBLE. THE ROAD AND WEATHER CONDITIONS WERE _____

HIRED RELIEF CARS FROM _____

WORK DONE TO RELIEVE UNIT IN TROUBLE WAS _____

WAS UNIT REPAIRED AT SCENE _____. IF SO, WHEN COMPLETED _____ A.M. _____ P.M.

WAS UNIT TOWED TO THE SHOP _____ BY WHAT UNIT _____ A DRIVER _____

DRIVER PROCEEDED ON HIS RUN AT _____ A.M. _____ P.M. WITH UNIT NO. _____

MECHANICS STARTED BACK AT _____ A.M. _____ P.M. WITH UNIT NO. _____

AND ARRIVED AT THE SHOP AT _____ A.M. _____ P.M.

ADDITIONAL REMARKS A _____

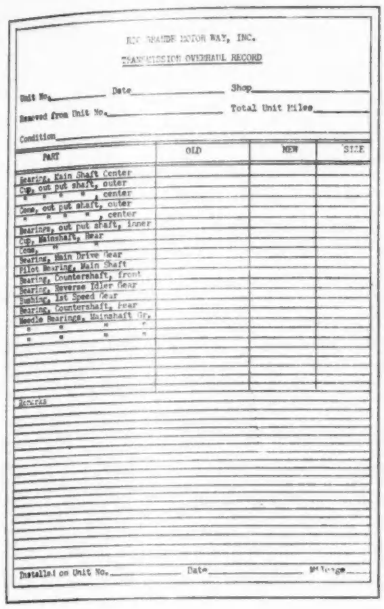
_____ MECHANIC'S SIGNATURE

_____ APPROVED _____

_____ SHOP FOREMAN

This report will be made out on all road calls, by the mechanic or person that makes the call. He will sign this report and turn it over to the Shop Foreman for approval.

1 COPY - SHOP FOREMAN
ORIGINAL - DENVER SHOP



RIO GRANDE MOTOR WAY, INC.

TRANSMISSION OVERHAUL RECORD

Unit No._____ Date_____ Shop_____

Removed from Unit No._____ Total Unit Miles_____

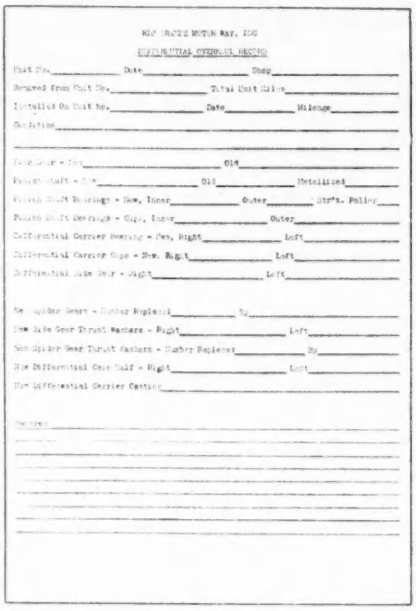
Condition_____

PART	OLD	NEW	SIZE
Bearing, Main Shaft Center			
Cup, out put shaft, outer			
" " " center			
Cone, out put shaft, outer			
" " " center			
Bearings, out put shaft, Inner			
Cup, Mainshaft, Rear			
" " " Cone			
Bearing, Main Drive Gear			
Pilot Bearing, Main Shaft			
Bearing, Countershaft, Front			
Bearing, Reverse Idler Gear			
Bushing, 1st Speed Gear			
Bearing, Countershaft, Rear			
Needle Bearings, Mainshaft Fr.			
" " " " Rr.			
" " " "			

Remarks

Installed on Unit No._____ Date_____ Mileage_____

FIG. 6 Transmission overhaul record is part of complete procedure series



RIO GRANDE MOTOR WAY, INC.

DIFFERENTIAL OVERHAUL RECORD

Unit No._____ Date_____ Shop_____

Removed from Unit No._____ Total Unit Miles_____

Installed On Unit No._____ Date_____ Mileage_____

Condition_____

Pinion Gear - Rear_____ Old_____

Pinion Shaft - Rear_____ Old_____ Installed_____

Pinion Shaft Bearings - New, Inner_____ Outer_____ Str'd. Roller_____

Pinion Shaft Overhigh - Cups, Inner_____ Outer_____

Differential Carrier Bearing - New, Right_____ Left_____

Differential Carrier Cups - New, Right_____ Left_____

Differential Side Gear - Right_____ Left_____

New Rubber Seals - Number Replaced_____ By_____

New Side Gear Thrust Washers - Right_____ Left_____

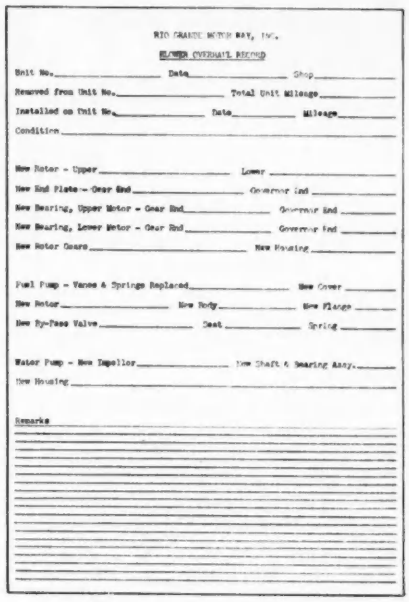
New Spider Gear Thrust Washers - Number Replaced_____ By_____

New Differential Case Half - Right_____ Left_____

New Differential Carrier Casting_____

Remarks_____

FIG. 7 Differential overhaul record is similar, giving details of work



RIO GRANDE MOTOR WAY, INC.

BLOWER OVERHAUL RECORD

Unit No._____ Date_____ Shop_____

Removed from Unit No._____ Total Unit Mileage_____

Installed on Unit No._____ Date_____ Mileage_____

Condition_____

New Rotor - Upper_____ Lower_____

New End Plate - Gear End_____ Governor End_____

New Bearing, Upper Rotor - Gear End_____ Governor End_____

New Bearing, Lower Rotor - Gear End_____ Governor End_____

New Rotor Gears_____ New Housing_____

Fuel Pump - Vanes & Springs Replaced_____ New Cover_____

New Rotor_____ New Body_____ New Plunger_____

New By-Pass Valve_____ Seat_____ Spring_____

Water Pump - New Impeller_____ New Shaft & Bearing Assy._____

New Housing_____

Remarks_____

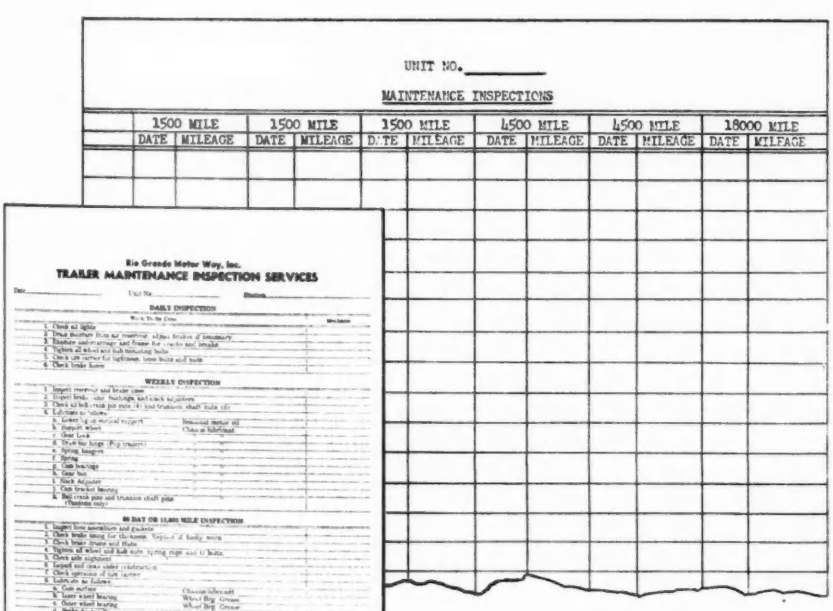
FIG. 8 Blower overhaul record is unusually complete for this type unit

the supervisor of maintenance. When the unit fails, this record is used to determine the size and fit of the new parts that will be needed, and the information is immediately available to send to the shop foreman in whatever division the failure might take place.

When mechanical failures occur a mechanic's report (Fig. 4) is immediately filled out and later all members of the engine room force are called together, the cause of the failure explained and means are discussed whereby similar failures may be avoided. Every effort is made to see that all personnel know the preventive measures to be taken. If there is doubt as to the cause of the failure, the failed part is sent to the laboratory and studied. Findings of the headquarters division and those of the laboratory are made available to all shops of the system. Special problems, which include frequent operations at temperatures as low as 50 degrees below zero, are subjects of inter-system discussions between shop foremen and superintendents, the experiences of one frequently helping to solve the difficulties of another.

All of the foregoing pertains to power equipment. Rio Grande also has a similar PM routine for all its trailer units. For this work, Form 402 (Fig. 9), lists all required operations at daily, weekly, 10,000-mile and semi-annual inspections. On the reverse is space for additional work notations, and like Form 406, this one also doubles as a shop order and as a means of informing headquarters of all work completed.

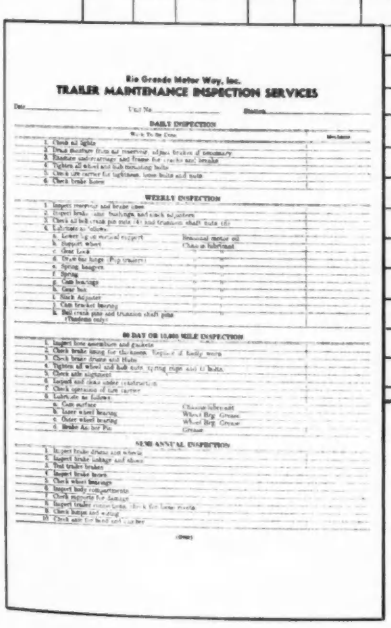
Finally, the company has a short cut system to its records. This is the Unit Record Book which is merely a folder with a few sheets briefly summarizing inspections and repairs over a long period of time. One sheet from this book is reproduced as Fig. 10. They merely recap in handy-to-find form the information contained on the detailed reports.



UNIT NO._____

MAINTENANCE INSPECTIONS

1500 MILE		1500 MILE		1500 MILE		4500 MILE		4500 MILE		18000 MILE	
DATE	MILEAGE	DATE	MILEAGE	DATE	MILEAGE	DATE	MILEAGE	DATE	MILEAGE	DATE	MILEAGE



Rio Grande Motor Way, Inc.

TRAILER MAINTENANCE INSPECTION SERVICES

Date_____ Unit No._____ Station_____

DAILY INSPECTION

1. Check all lights
2. Test brakes from air reservoir, adjust brakes if necessary
3. Examine undercarriage and frame for cracks and trouble
4. Tighten all wheel and hub mounting bolts
5. Check all current for lightness, loose bolts and leaks
6. Check brake hoses

WEEKLY INSPECTION

1. Inspect reservoir and brake lines
2. Inspect lenses, color, backlight, and check all markers
3. Check all hub caps for pin slots (4) and transmission shaft bolts (2)
4. Lubricate as follows:
   a. Lubricate universal support — Universal motor oil
   b. Fifth-wheel — Chassis lubricant
   c. Gear Lock
   d. Trunk for hinge (Fig trunnion)
   e. Spring hangers
   f. Spring
   g. Cam bearings
   h. Gear box
   i. Slack adjuster
   j. Cam bracket bearing
   k. Big trunk pins and trunnion shaft pins
   (Tandems only)

90 DAY OR 10,000 MILE INSPECTION

1. Inspect brake assemblies and gaskets
2. Check brake lining for thickness. Replace if badly worn
3. Check brake drums and hubs
4. Tighten all wheel and hub nuts, spring eyes and U bolts
5. Check axle alignment
6. Inspect and take under construction
7. Check operation of fan carrier
8. Lubricate as follows:
   a. Cam surface — Chassis lubricant
   b. Inner wheel bearing — Wheel Big Grease
   c. Outer wheel bearing — Wheel Big Grease
   d. Brake Ac bot Pin — Grease

SEMI-ANNUAL INSPECTION

1. Inspect brake drums and wheels
2. Inspect brake linkage and shoes
3. Pack brake bushes
4. Inspect brake hoses
5. Inspect wheel bearings
6. Inspect body compartments
7. Check suspension for damage
8. Inspect tandem [illegible]
9. Check hinges and spring
10. Check axle for bend and camber

(over)

FIG. 9 (left) Trailer inspection form accomplishes same purpose for trailers as Form 400 does for trucks

FIG. 10 (above) Page from unit record book provides quick recap of service

Factory Service news . . . Briefed for F

Chevrolet Shimmy Correction . . Diamond T Bearing Fitting . . Sticking Valves in Federals

Chevrolet

Steering Knuckle Thrust Washer

THE CONDITION of front wheel shimmy experienced on 1½ and 2 ton heavy duty trucks when operated on certain types of rough roads may be corrected by the introduction of additional friction at the front axle steering knuckles. This additional friction may be obtained by the use of a thrust washer unit at the steering knuckle in place of the ball bearing used at this point.

A steering knuckle thrust washer unit, part number 3847676, is now available for service use and installation of this unit may be made on past model trucks 1940-1948 inclusive, where a heavy duty axle is used. This unit when used will introduce sufficient additional friction to correct the shimmy condition and still not noticeably increase the steering effort. The kit, however, will not overcome irregularities with respect to front axle tightness and geometry, incorrectly adjusted or loose steering gears or tires that are not reasonably in balance.

When installing this unit, the open end of the dust shield should be down and the bronze thrust washer placed between the two steel thrust washers. Examination of the steel washers will find one edge on each washer chamferred. It is important, when installing the unit, that the chamferred edge of the upper steel washer should be at the top and the chamferred edge of the bottom steel washer should be down.

Up and down clearance between the steering knuckle and axle "I" beam should not exceed .005 in. after assembly of the steering knuckle thrust washer unit to the truck axle.

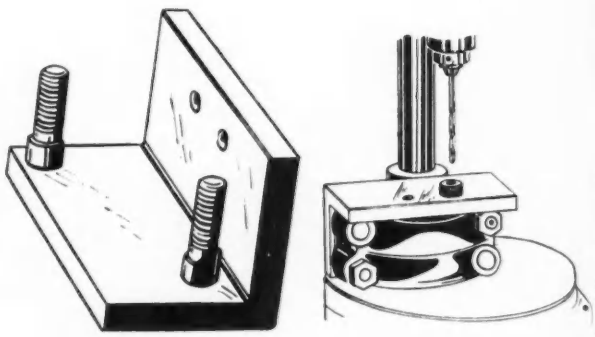
Diamond T

New Bearings for JX Engines

OLD STYLE JX bearings can be fitted with the new type, provided modifications are made at the main rear bearing cap. All of the main and rod bearing inserts are interchangeable with the old type shells except for the rear main bearing, which is now provided with a new bearing cap, conventional type shell inserts and two sets of separate thrust flanges. The thrust flanges come in two places with the lower halves doweled to the cap.

For installation in old JX engines it will be necessary to use a new bearing cap or to drill the old one for dowels. The latter is recommended as the better procedure, since it will not cause any change in the concentricity of the bearing support.

A fixture designed to facilitate the drilling and reaming operations required will provide accurate location of the dowel pins. This can be obtained from the factory at Canton, Ohio.



This jig consists of a drill guide, a jig base, a reamer guide. The drill guide is installed in either fixture hole and placed on a drill press table, and a 9/64-in. hole is drilled in the cap to a depth of .312 in. to .328 in. The reamer guide is inserted in each hole and they are reamed to 5/32 in. diameter. The some operation is performed on the other side of the bearing cap. A soft hammer is used to insert the soft four dowel pins in the cap.

Federal

Sticking Valves

SOME sticking valve trouble has been experienced in JX engines. Investigations disclose the cause of the trouble to be condensation; and that the condition is more prominent in trucks which are stored and started only occasionally. The condensation is caused by not running the engine long enough for the cooling system to reach normal operating temperature range. The moisture condensation when combined with lubricating oils and fuels, causes oxidation and forms varnish and gum on engine parts.

Head Gasket Failures

INVESTIGATIONS have disclosed that cylinder head gasket failures and warpage of cylinder heads have occurred with improper tightening and insufficient tension on cylinder head capscrews. To eliminate failures of this nature, it

Fleets from Manufacturers' Bulletins

International's Brake Squeal Remedy, Float Change . . . Studebaker Cab Reinforcement

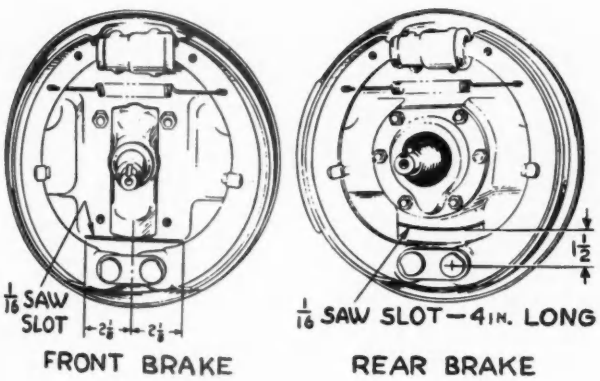
vitally important that the capscrews be tightened properly, as outlined in Technical Service Bulletin No. 01-9.

The lower quality present day fuel which burns more rapidly and produces more heat, combined with higher compression engines, requires more careful tightening of cylinder heads—proper tension and proper tightening sequence. Cylinder head tightening sequence is outlined in Technical Service Bulletin No. 01-9, with reference to engine bulletins for tension.

International Harvester

Brake Squeal Remedy

AN EFFECTIVE remedy for brake squeal on the K-1, KB-1, K-I-M, K-2, KB-2 involves slotting the front and rear brake backing plates on the 12 x 1¾-in. brakes are shown in the drawings. This remedy can be performed without removal of the backing plates or without disconnecting the lines.

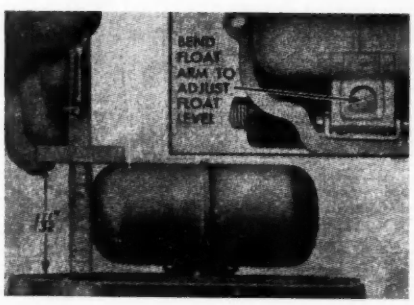


Remove front wheel and inner bearing cone and rollers. Remove the four nuts holding the backing plate and the dust shield. Reinstall the two upper nuts to retain a rigid assembly of the backing plate to the spindle. Remove the lower backing plate bolts and scribe a line at bottom of steering knuckle opening in backing plate. Slot backing plate to dimensions shown with a power hack saw and reassemble.

For the rear, remove the wheels and scribe a guide line on the curved out portion of the backing plate, center punch and drill out to permit entrance of a hack saw blade. With power hack saw slot backing plate to dimensions shown.

Carburetor Change

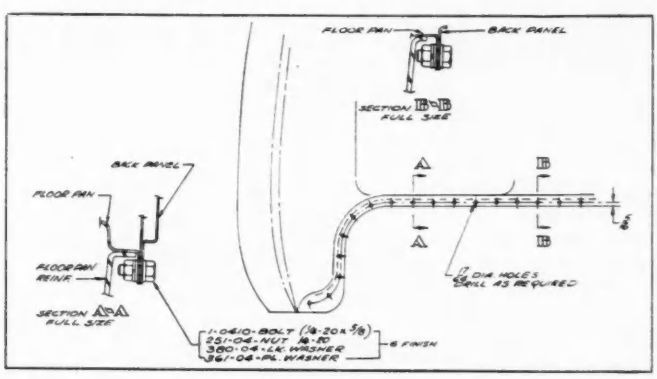
RED AND FBC engines. In order to satisfy engine fuel requirements when operated at maximum horsepower output the discharge pressure of the fuel pump has been increased from 1½ min, 3½ max, to 4 min, 5 max lb per sq in. Fuel pumps equipped with the stiffer spring can be identified by the AC number 9134 or 1539134 stamped on the pump mounting flange. This has necessitated lowering the carburetor fuel level and changing the float setting dimensions from 1¼ to 1 11/32 in. on RED engines with Holley AA1G carburetors.



Studebaker

Reinforcing Cab

IF ANY separation of the cab back panel from the floor pan along the rear lower edge of 1949 trucks is noted, welding should not be attempted because of the proximity of the gasoline tank.



The condition should be corrected by drilling a 17/64-in. hole at the center point of each separation and installing the following parts: 13X503, ¼-in. 20 x ⅝ bolt; 20 x 81, 14-in. nut; 380-04, lockwasher; and 361-04, plain washer.

MURDER! . . . in the F

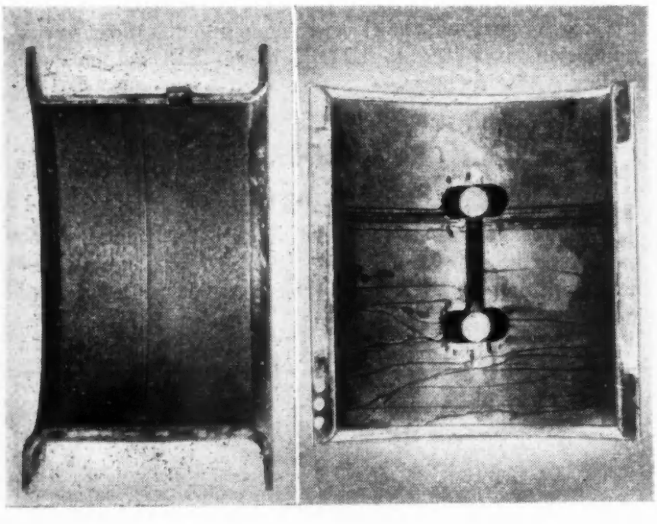
THE VICTIM — BEARINGS . . . Examine this Rogue's Gallery:

Developed to aid the fleetman in diagnosing common part failures, this first of a series of pictorial articles should prove invaluable for training mechanics and drivers.

Death is not easy to look upon, and as the fleetman "views" these mutilated parts, he may be moved to examine his own operation to see what can be done to save lives.

These illustrations were provided by manufacturers interested in helping fleets obtain more satisfaction from bearings. Pictures are actual photographs of breakdowns which occurred through improper maintenance.

CAUSE - - -
Abrasives in the Oil.



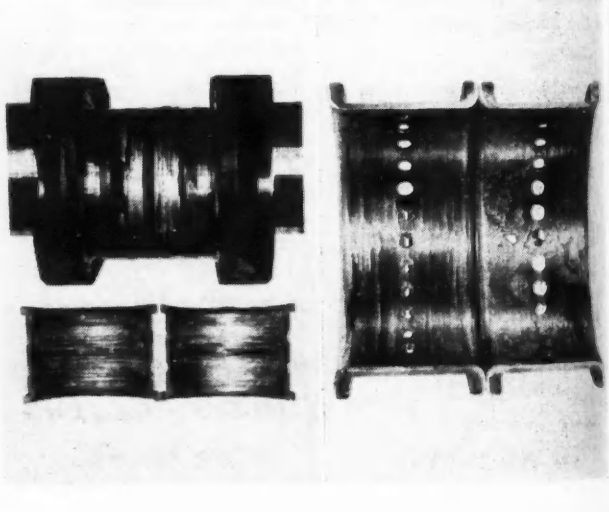
EFFECT - - -

Evidence of dirt and grit may be noted by scoring of the face, center; pitting of the surface, left; or pock marks similar to those at right.

REMEDY - - -

Dirt and chips may be left on the bearings and crankshaft surfaces at the overhaul. Dirty oil contaminated from dusty conditions, lack of an air filter or infrequent crankcase drains will show deep score lines running in same direction as shaft rotation. Particles enter at the oil hole and work their way to outside. Change oil filter regularly, clean air filter as required, clean engine after overhaul and drain oil periodically.

CAUSE - - -
Insufficient Oil Clearance.



EFFECT - - -

Lining metal is wiped out of upper half, right, and carried around and deposited in the lower half, at left.

REMEDY - - -

Hold adjustments to manufacturers' specifications. Check clearances after adjustment. Use accurate gages for measurement. Be sure bearing is lubricated before starting engine after overhaul, and break it in carefully, using correct type and grade of oil.

Fleet Field

it may save you many a headache

operation or through poor material.

Here is what happens when proper care is not taken in service, adjustment, cleaning, or operation.

Photographs courtesy of following manufacturers: Federal-Mogul Corp., Monmouth Products Co., Quaker State Oil Refining Corp.

CAUSE - - -

Improper Adjustment.

EFFECT - - -

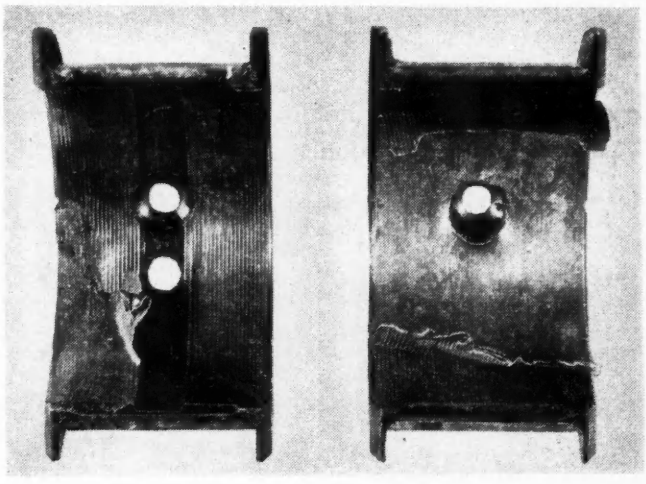
Fatigue failures showing up in cracking at one end, left, and pitting or checking of metal in concentrated areas shown at right.

REMEDY - - -

Fatigue failure, left, resulted from pulling up the bearing too tightly so that it was pinched at one end. Bearing at right was installed in a cocked position, allowing for concentration of the load on one half of the bearing. Too loose fits, as well, cause fatigue cracking and lifting or pitting of the metal surface. Check adjustments carefully; following manufacturers' recommendations. Use accurate gages.

CAUSE - - -

Inferior Bonding.



EFFECT - - -

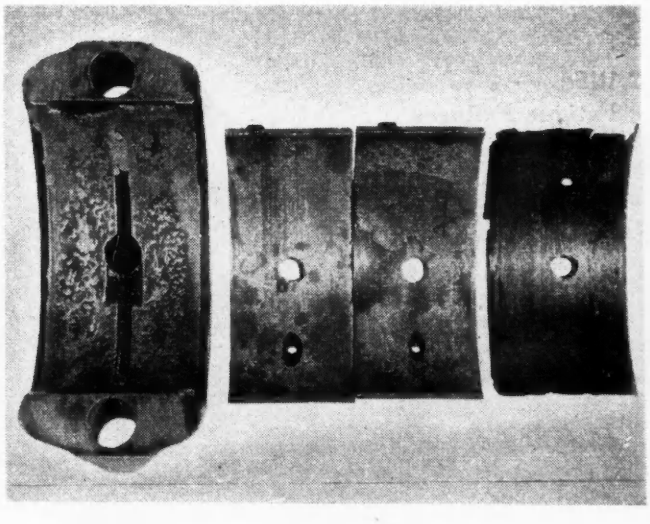
Bearing metal is pulled loose from the steel backing in large pieces or in flakes. Back material shows through cleanly in its original color and is free from tin or solder.

REMEDY - - -

This structural imperfection is rare, but, unfortunately, cannot be detected prior to failure. When rebabbitting occurs in the field, some fail to properly clean and tin the forging. This contributes to early failure. Cheaper rods and bearings with inferior babbitt may develop this type of breakdown. When forgings are re-babbitted, all traces of tin must be removed as well as rust and grease.

CAUSE - - -

Oil Oxidation.



EFFECT - - -

Large craters or pits are eaten out of bearing surface by oil oxidation-acids. Pin hole pits, right, are another form of corrosion.

REMEDY - - -

Use a stable, inhibited oil to counteract corrosive acids. Change oil frequently. Maintain proper operating temperatures. Avoid excessive choking. Observe proper engine warm-up, and keep down blow-by.

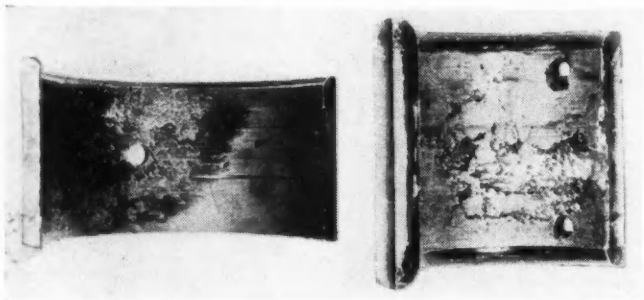
(Turn to next page, please)

MURDER! . . . in the Fleet Field

Continued from Page 81

CAUSE - - -

Insufficient Lubrication.



EFFECT - - -

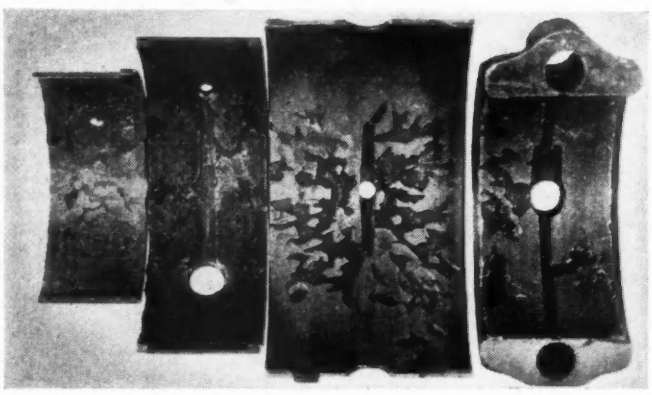
Scuffing and scarring noted on bearing face. Babbitt will eventually break away, heat and melt from excessive friction. Failure will be evidenced over the entire surface usually and will resemble fatigue failure.

REMEDY - - -

Keep oil pressure up. Low oil pressure may be caused by excessive wear and clearance at the main, rod or camshaft bearings, so clearances must be within limits. Check oil pump gearing and housings as well as pressure relief spring. Keep crankcase to operating level and use proper grade and type of engine oil.

CAUSE - - -

Fatigue Failures.



EFFECT - - -

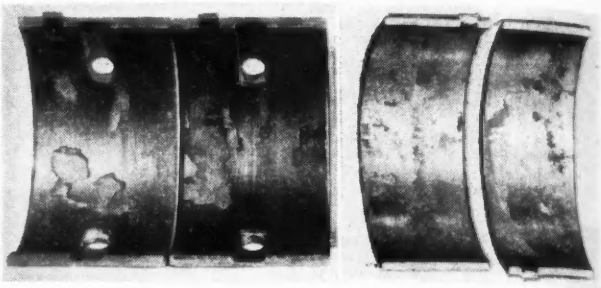
Mechanical break down or crystalizing of the soft metal. Cracked metal sometimes breaks away, leaving craters or irregular holes. This is similar to corrosion failure except fatigue failures have more regular edges, sharp angles and cracks.

REMEDY - - -

Keep speeds to normal limits. Don't overload. Bearing life is directly proportional to the severity of the usage imposed upon them.

CAUSE - - -

Overheating.



EFFECT - - -

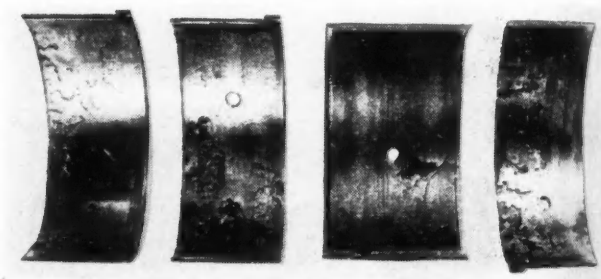
Metal becomes so hot it melts and flows away from the steel backing.

REMEDY - - -

This usually occurs from lack of adequate lubrication. To provide a cushion for the metal and to aid in dissipating the heat of friction oil must have proper body or viscosity and must be supplied in sufficient quantity and under full pump pressure. Keep system clean. Keep oil pressure to factory standards. Maintain proper clearances in main, con-rod and cam shaft bearings to insure an adequate oil supply to bearings.

CAUSE - - -

Overspeeding and Overloading.



EFFECT - - -

Fatigue failure scattered over the bearing face. Metal is flaked off in spots, cracked, checked and loose due to excessive stresses imposed by either too heavy loading, engine lugging or overspeeding.

REMEDY - - -

Keep speeds and loads to recommended limits. Avoid lugging the engine, revving engine with no load, and keep spark adjusted to avoid detonation.

(TURN TO PAGE 170, PLEASE)

Crime Doesn't Pay

Like bearings, engine valves have been the unsuspecting victims of improper operation, service or adjustment. Next month the Rogue's Gallery will feature a series of pictures showing what can happen to these parts when careless mechanics and/or drivers take over.

These gruesome views may shock you, but they will provide effective means of proving to your men why precision work is required in valve service—or why careful driving practices are necessary—or why fuel and oil should be carefully selected. This "line up" should help in diagnosing common troubles so that proper remedial measures can be suggested.

A Systematized Fleet Safety Program

BY THE BUREAU OF HIGHWAY SAFETY .... NATIONAL COUNCIL OF PRIVATE MOTOR TRUCK OWNERS, INC., WASHINGTON, D. C.

The Why and How of Accident Reports & Records

The Why

SAFETY TEXT • NUMBER 4

Accident Records Fundamental Aid to Accident Prevention

FOR effective safety work, it is essential that we have thorough knowledge and complete understanding of accident facts in order to locate and measure the hazards, to determine the causes and contributing conditions, to aid in establishing preventive methods, and to check results. We must first know what we are trying to prevent before we can successfully prevent it. Such guidance comes from records of past accidents.

Every successful motor vehicle safety program in the past has been based upon known facts of accident causes and prevention developed by an adequate and accurate system of reports and records. From the knowledge thus obtained, operators are in a better position to reduce fleet costs and improve the efficiency of their driver personnel.

For purposes of reporting and recording, a vehicle accident may be defined as "any accident resulting in injury to a person or damage to property or equipment, involving the use of or the operation of any company-controlled vehicle, whether the vehicle be stopped, in motion, parked, or on or off company premises."

Most business enterprises maintain records for purposes of (1) preserving important information of practical value, (2) providing a continuous picture of their progress, problems, etc., (3) providing data upon which effective programs of future activity may be based, and (4) revealing areas in which special organizational efforts should be expended. This procedure is equally applicable and essential to the motor vehicle owner and operator.

The legal value of a good accident recording system can also, in most fleets, be demonstrated by a substantial dollars-and-cents saving. Equitable disposals of all legitimate damage claims rest largely upon examinations of the detailed circumstances and conditions surrounding the accidents. Also, a complete report of an accident is essential in checking and preventing fraudulent claims.

(TURN TO NEXT PAGE, PLEASE)

THE Why CONTINUED

The maintenance and proper use of adequate accident records will provide the commercial motor vehicle owner with the necessary data:

To point out weak spots so that effective measures can be applied to correct specific situations;
To properly train and supervise his drivers;
To remedy mechanical defects;
To aid in laying out safest routes and delivery schedules;
To evaluate his own operation and establish safe driving policies.

A good accident record also promotes public recognition and favorable public relations.

Some form of accident reporting is a mandatory requirement for most motor carriers. The Interstate Commerce Commission requires reports from "for-hire" motor carriers under its jurisdiction (private carriers being presently exempted from this requirement); most State public utility commissions and various municipal governments require such reports from operators of vehicles under their control; and insurance companies require reports from those they insure. Also, practically all large motor-fleet operators maintain a system of accident reporting and recording from which they analyze the experience of their own operations.

In view of these varied reporting requirements, it is evident that uniformity in the matter of forms is desirable and that the information contained therein be complete for all purposes.

Accident records are compiled from pertinent information taken from lengthier, detailed accident reports. Therefore, it is necessary to first have the accident reports in order to establish adequate accident records.

"On The Scene" Reports

Every driver of a commercial motor vehicle involved in an accident should be required to fill out an accident report *at the scene of the accident.* This written report, preferably on a standard form, should embody all factual information concerning the accident which it is possible to obtain so that the cause and responsibility therefor may be determined and the proper remedial measures taken to prevent any repetition.

It is also desirable to supplement the "on-the-scene" report by a more detailed report made out by the driver immediately upon his return to the office, garage or terminal.

"Cooling Off" Period

As a further aid in determining causes and responsibility, it may also be advisable to have the driver fill out a simple, supplementary report approximately 24 hours after the accident, which is designed to get his more normal opinion concerning the accident after the lapse of a brief "cooling off" period. (Sample standard forms for each of the suggested driver's accident reports are included as a part of this article and more fully discussed in the Instruction Sheet which follows.)

The use of these standardized report forms will be advantageous for two reasons. First, they will provide the information needed in accident prevention work. Second, they will contain the facts generally required by insurance companies and by the majority of State Motor Vehicle Departments, making it very simple to transfer information from one to the other.

Once these original reports are received by the employer or his safety supervisor, they become the basis for the employer's permanent accident record and the processing of the raw data into useful accident facts begins.

Analyzing Accidents

These reports will contain a wealth of information for an accident-prevention program. When summarized and analyzed, they will assist in determining the TYPES and CAUSES of accidents, and the RESPONSIBILITY for them. Not only will the reports provide helpful information on individual drivers and delivery problems, but they will present a broad view of the entire safety problem, showing trends and cumulative circumstances, from which the necessary corrective measures may be determined and applied.

Driver Records

An individual record of each driver and the history of his driving accidents should be kept by every fleet operator. Too much importance cannot be attached to the value of complete and accurate data on individual driver-employees and their accident histories. Small operators, however, may not find it expedient to maintain an elaborate or separate record of this data, but they should include such information in their employment, personnel or medical records where it is readily available for review and analysis.

From such a driving history of individual employees a careful analysis may disclose that a driver has become incapable of safely operating one type of vehicle but may be entrusted with another type; or that he may be satisfactory on a city delivery route but not suited to an over-the-road operation. It may also indicate a distinct lack of ability to drive safely.

Accident records for each individual driver also serve as helpful guides in retraining, and provide the employer or safety supervisor with a proper background to talk intelligently with a driver about his problems.

Fleet Records

An analysis sheet or periodic summary of the accident record of the entire fleet is also necessary for a complete picture of accident experience and from which future safety policies and accident-prevention activities may be charted. This tabulated file of cumulative accident data obtained from the respective reports, properly classified and arranged systematically, is essential for the determination of accident trends and the economic losses sustained.

The proper interpretation of a traffic accident record, after careful study and analysis, is also needed. Consequently, in addition to preparing the statistics themselves, the person making an analysis should develop concise comments for drivers and others, pointing out the good

and bad features including comparisons with previous periods or with other operations, and should suggest or direct the necessary accident prevention efforts which will be needed to maintain an improving record. It should be the aim of the employer never to let his figures become merely an historical record, but rather to make them an up-to-date diagnosis of what is wrong with his motor vehicle operation and to make himself and his organization, through a thorough knowledge of the facts, outstanding in the field of safety and accident prevention.

The Right Man for the Job

Most motor truck operators have found that adequate accident records, frequently consulted, are a most valuable means of fitting the right man to the right job and in settling their driver-personnel problems to the best advantage of all concerned.

The accompanying "Instructions" and sample forms will assist you to inaugurate a simple system of accident reporting and recording for your own private motor truck operations, either small or large.

The How of ACCIDENT REPORTS and RECORDS

SAFETY INSTRUCTION No. 4

EFFICIENT management recognizes that an adequate system for recording and using pertinent traffic accident data is most important. It is the prime responsibility of the driver to make out accident reports and that of the owner or employer (or his safety supervisor) to keep and analyze the records.

In the foregoing "Text" on this subject, we have set forth the need FOR, and the purposes OF, accident reports and records. In the instructions which follow, we have endeavored to outline the necessary details for the establishment of an adequate and practical system of motor vehicle accident reporting and recording of particular benefit to the smaller fleet operators of commercial motor vehicles.

Essential Steps in System

There are five essential steps in developing complete fleet accident records leading to an effective highway safety program. They are:

1. Get a complete and accurate report of every accident—a written record of all vital facts bearing on the causes, circumstances and results.

2. Enter each accident on a record sheet or card for the driver involved, so that each driver's complete accident experience is in one place.

3. Record the important circumstances, conditions, actions and results of each accident on an analysis sheet; then correlate them to obtain the overall picture of your fleet's accident problem.

4. Compute and compare your monthly and annual accident rates with previous periods, and with other fleets; also compare various divisions of your fleet operations with each other.

5. Prepare special studies of driver records and accident factors, utilizing such information to correct unsafe driving practices and unsafe vehicle conditions, to keep drivers interested, and to maintain the impetus of your safety campaign.

"On-The-Scene" Report

A complete and concise report made out by the driver at the scene of the accident is an essential requirement. Such report should be made in writing upon a standard form provided by the employer. A convenient form for this "on-the-scene" report is a 3¾ in. x 8 in. tag stock folder (FORM "A") which may be kept in an envelope or other suitable container in the cab of each truck.

A good driver's accident report will embody all factual information available concerning the accident which it is possible to obtain, including signed statements from all witnesses. Special Witness Cards will also aid the driver in recording as many witnesses as possible and in obtaining a better opinion of responsibility (FORM "A-1").

The report should contain accurate answers to the following:

What happened?
Who was involved?
Where, when, how and why did the accident happen?

This initial report is the real basis for accident prevention statistics and its importance should be emphasized to the driver.

Official detailed report—A more detailed report from the driver upon his return to the garage or terminal office, preferably under the direction of the employer or safety supervisor, is also desirable (FORM "B").

Supplemental report—A supplementary report made out 24 hours after an accident when the driver's emotions are more stabilized is also helpful in determining responsibility and possible preventive measures for the future. This report (FORM "C") need only include the driver's candid opinion as to the causes of the accident, how he contributed to the same, and what his future course of action would be under similar circumstances.

All of the reports cited above should be filed with other personnel data as an integral part of the employer's permanent safety records.

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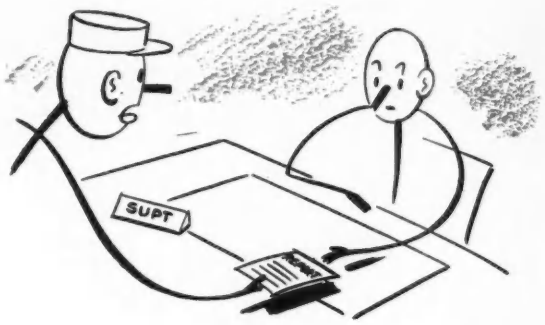
THE **How** CONTINUED



Driver's History and Accident Record

To provide a source of ready reference for evaluating the soundness of judgment used in the selection, training and supervision of drivers, an individual record of each driver with a history of his driving accidents should be kept by every fleet operator.

This record may be kept by the employer or safety supervisor for every driver, and should include in its simplest form (FORM "D"):

1. ***Driver's name—date of birth***
2. ***Date of employment***
3. ***Type of vehicle operated***
4. ***Base of operations***
5. ***Accident statistics, including—***
   - **(a) Date and file number of each accident**
   - **(b) Type of accident**
   - **(c) Cause (avoidable or unavoidable)**
   - **(d) Responsibility**
   - **(e) Cost—amount of damages or claims paid and other costs**
   - **(f) Time lost**

Many operators might also find it advisable to expand such a record to include the driver's previous accident record (when obtainable), the results of physical examinations and road tests, penalties inflicted for accidents and traffic violations, awards given for safe driving practices, reports received on especially courteous or discourteous action of the driver, etc.

Fleet Records

It is equally important that complete statistics or periodic summaries be maintained for your entire fleet operation in order to properly analyze the TYPES of accidents, the CAUSES of accidents and the RESPONSIBILITY for accidents; for it is from such information

FORM A is 4-page booklet, 3¾ x 8 in. Front page is at left, center spread below, last page at right

VEHICLE ACCIDENT REPORT

[Form A]
Bureau of Highway Safety of
THE NATIONAL COUNCIL OF PRIVATE MOTOR TRUCK OWNERS, INC.
National Press Bldg., Washington 4, D. C.

IMPORTANT!

1. This report MUST be made out IMMEDIATELY —before you leave scene of accident—by the driver for EVERY accident, whether considered trivial or not.
2. This report with ALL questions answered MUST be turned in THE DAY of accident.
3. If accident is serious, driver should immediately call the manager or supervisor.
4. Get names and addresses of as many witnesses as possible, whether they are favorable to you or not.

Supervisor:

WITNESSES

Policeman's Number or Name:

Date _____ Time _____

Place _____

Reg. No. of Your Car _____

Reg. No. of Other Car _____

Your Operator's License No. _____

Other Operator's License No. _____

Other Operator's Name and Address

Other Owner's Name and Address

Name and address of occupants of other vehicle

Our Vehicle Number _____

Make & Type of Other Vehicle _____

Names and Addresses of any persons injured, nature of injuries and where treated.

What statements if any were made by injured party? _____

Damage to other auto, vehicle or property.

What statements if any were made by party whose property was damaged?

Damage to your auto or vehicle:

On which side of street were You? _____

Going which way? _____

How far from curb? _____

At what speed per hour? _____

Condition of the weather? _____

Kind of pavement and condition? _____

Describe just what happened:

Make out diagram on next page

that the necessary corrective measures may be developed.

When recording and classifying the various *types* of accidents, the following breakdowns are in general use:

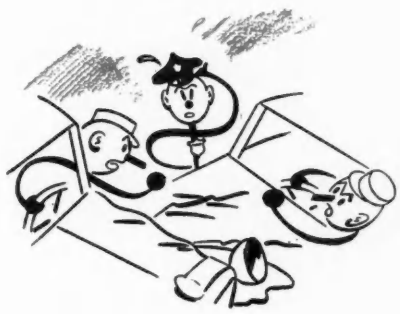
Accident or Collision
- **Backing**
- **Parking**
- **Head On**
- **Rear End**
- **Runaway**
- **Turning**
- **Passing**
- **Straightaway**
- **Unclassified (loading, unloading, etc.)**

Object Collided with
- **Pedestrians—adult**
- **Pedestrians—children**
- **Fixed objects**
- **Moving vehicle**
- **Standing vehicle**
- **Bus, street car or railroad train**
- **Bicycle**
- **Animals**
- **Miscellaneous**

When recorded in separate columns these items will reveal how many accidents of each type are occurring in any given period.

Accident causes may be attributed to and classified under:

1. **Poor judgment**
2. **Failure to grant right-of-way**
3. **Failure of equipment**
4. **Failure or negligence of others**
5. **Lack of proper observation**
6. **Taking a chance**
7. **Violation of traffic laws**
8. **Speed**
9. **Skidding**
10. **Temporary physical disability**
11. **Drowsiness**
12. **Intemperance**
13. **Improper loading**
14. **Action of animals**
15. **Miscellaneous**



Although fixing the responsibility for an accident is often extremely difficult, such a determination should be made and recorded. The *responsibility* for accidents may be broken down for recording purposes into four categories, namely:

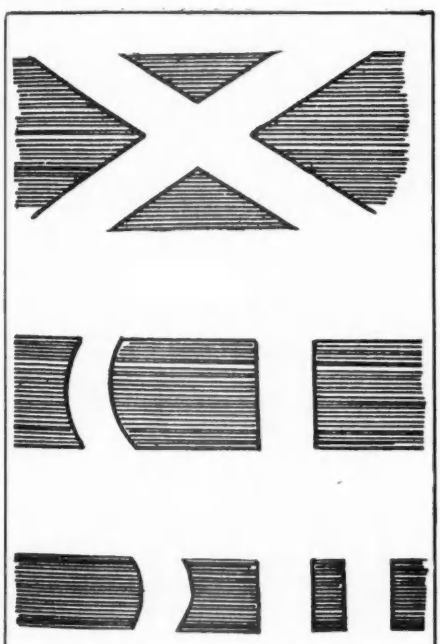
1. **No fault on part of the driver.**
2. **Driver partially at fault.**
3. **Driver totally at fault.**
4. **Company or employer responsibility (defective equipment, etc.)**

A recommended Commercial Vehicle Accident Analysis Sheet for a summarized fleet record is included as FORM "E." A smaller or less elaborate analysis sheet may be substituted and still adequately serve the purposes of small fleet operators who do not desire as detailed accident information as is provided for on a larger form.

Accident Frequency Record

To measure and maintain an accident frequency record of your own operations so that a comparison can readily

(TURN TO PAGE 24, PLEASE)



Show point of collision on above diagram.

Mark your vehicle as a square (□).

Mark other car, person or object collided with as a circle (O).

(Sign Here) _____

Address _____

FORM A-1 is handy 6 x 4 in. witness card which should be kept in vehicle. Space for additional remarks on back

WITNESS CARD

KINDLY FAVOR THE DRIVER by filling in this card.

Did you see the accident?..... Was anyone hurt?.....

Type of vehicles involved?.....

In your opinion who was at fault?.....

Remarks .....

(over)

Location of accident .....

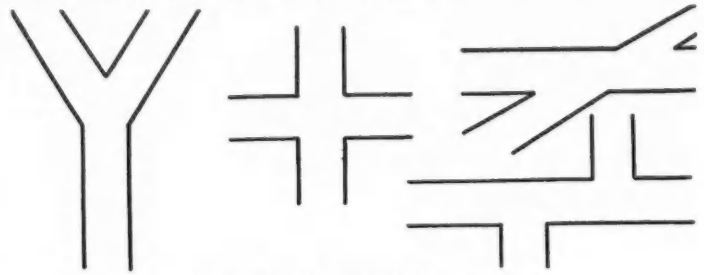
Date ..... Time .....

Name .....

Address .....

34. _____
(Describe fully how accident happened and cause thereof and state how accidents of this type can be avoided in the future.)

This diagram shows relative position of our car and the object collided with: (Use Diagram most closely resembling intersection involved.) Show our vehicle as ☐ — other vehicle as O.



35. USE THIS SPACE FOR OTHER NARRATIVE DESCRIPTION

36 DRIVER'S SIGNATURE

From My Investigation on _____ (Date) of This Accident:

37. Our Driver: Was Wholly Responsible ☐ Contributed to Cause ☐ Could Do Nothing to Prevent ☐

38. SIGNED _____ TITLE _____

[Form B]

Bureau of Highway Safety of

THE NATIONAL COUNCIL OF PRIVATE MOTOR TRUCK OWNERS, INC.

National Press Bldg., Washington 4, D. C.

OFFICE REPORT ON VEHICLE ACCIDENT

THIS ACCIDENT ONLY

Location _____
Time _____ M. Date _____
Equipment No. _____
Engine or Chassis No. _____
License No. _____

Company _____ Division _____ District _____
Employee _____ Age _____ Date Employed _____
Date Last Accident _____ No. Accidents in Our Employ _____

TYPE OF ACCIDENT
1. WE HIT THEM ☐
THEY HIT US ☐
2. MOTOR VEHICLE ☐
FIXED OBJECT ☐
PEDESTRIAN ☐
TROLLEY CAR ☐
HORSE DRAWN VEHICLE ☐
BICYCLE OR MOTORCYCLE ☐
RAILROAD TRAIN ☐
ANIMAL ☐
☐
3. HEAD ON ☐
REAR END ☐
SIDESWIPE ☐
DITCHING ☐
UPSET ☐
☐

LOCATION
4. CONGESTED DISTRICT ☐
RESIDENTIAL DISTRICT ☐
RURAL DISTRICT ☐
5. INTERSECTION ☐
STRAIGHTAWAY ☐
CURVE ☐
6. LEVEL ☐
HILL
UP ☐ DOWN ☐
CREST ☐ BOTTOM ☐
7. BRIDGE ☐
UNDERPASS ☐

LIGHT
8. DAYLIGHT ☐
DAWN OR DUSK ☐
DARK ☐

WEATHER
9. CLEAR ☐
CLOUDY ☐
FOG ☐
RAIN ☐
SNOW ☐
SLEET ☐

SURFACE OF ROAD
10. CONCRETE ☐
BRICK OR WOOD BLOCK ☐
ASPHALT ☐
MACADAM ☐
CLAY ☐
GRAVEL ☐

CONDITION OF ROAD
11. GOOD ☐ 12. DRY ☐
BAD ☐ WET ☐
UNDER REPAIR ☐ MUDDY ☐
OBSTRUCTION ☐ SNOW ☐
DUSTY ☐ ICY ☐
OILY ☐

WIDTH OF ROAD
13. NUMBER OF LANES _____
WIDTH EACH LANE _____ FT.

CONDITION OF DRIVER OR PEDESTRIAN

	Our	Other	Ped
14. INTOXICATED	☐	☐	☐
ASLEEP	☐	☐	☐
CONFUSED	☐	☐	☐
PHYSICAL DEFECT	☐	☐	☐
VIEW OBSTRUCTED	☐	☐	☐
APPAR. NORMAL	☐	☐	☐

ACTION

	Our	Other
15. STRAIGHT THRU	☐	☐
TURNING RIGHT	☐	☐
TURNING LEFT	☐	☐
BACKING	☐	☐
STANDING	☐	☐
PARKED	☐	☑
PASSING	☐	☐
SKIDDING	☐	☐
TOO FAST FOR COND'S	☐	☐
WRONG SIDE OF ROAD	☐	☐
CUTTING IN	☐	☐
FAILED TO SIGNAL	☐	☐
DISREGARDED SIGNAL	☐	☐
DISREGARDED OFFICER	☐	☐
DISREGARDED WARN. SIGN	☐	☐
DROVE OFF ROAD	☐	☐
DOUBLE PARKED	☐	☐
☐	☐	☐

DAMAGE OR INJURY

	Slight	Serious	Fatal
16. OUR DRIVER	☐	☐	☐
OTHER DRIVER	☐	☐	☐
PEDESTRIAN	☐	☐	☐
OUR PASSENGER	☐	☐	☐
OTHER PASSENGER	☐	☐	☐
OUR VEHICLE	☐	☐	
OTHER VEHICLE	☐	☐	
CARGO	☐	☐	
OTHER PROPERTY	☐	☐	
CARGO SPILLAGE	☐	☐	
☐	☐	☐	

FIRE

	Slight	Serious
17. OUR VEHICLE	☐	☐
OTHER VEHICLE	☐	☐
OTHER PROPERTY	☐	☐

TYPE OF VEHICLES

	Our	Other
18. PASSENGER CAR	☐	☐
TRUCK	☐	☐
TRACTOR	☐	☐
SEMI-TRAILER	☐	☐
TRAILER	☐	☐
☐	☐	☐

BRAKES

	Our	Other
19. OUR BRAKES ____ WHEEL		
MECHANICAL	☐	☐
HYDRAULIC	☐	☐
VACUUM	☐	☐
ELECTRICAL	☐	☐
AIR	☐	☐

CONDITION OF VEHICLES

	Our	Other
20. DEFECTIVE BRAKES	☐	☐
LIGHTS ON	☐	☐
IMPROPER LIGHTS	☐	☐
LIGHTS OFF	☐	☐
DEFECTIVE STEERING GEAR	☐	☐
SMOOTH TIRES	☐	☐
BLOWOUT—PUNCTURE	☐	☐
EQUIPPED WITH CHAINS	☐	☐
DEFECTIVE HORN	☐	☐
OBSCURED WINDSHIELD	☐	☐
APPARENTLY NORMAL	☐	☐

PEDESTRIAN

21. CROSSING AT INTERSECTION	☐
CROSSING NO INTERSECTION	☐
STANDING IN TRAFFIC LANE	☐
PLAYING IN ROAD	☐
OUT FROM PARKED CARS	☐
OUT FROM TREES, ETC.	☐
ON OR OFF VEHICLE	☐
ON OR OFF TROLLEY	☐
WORKING ON ROAD	☐
NOT IN ROADWAY	☐
HITCHING ON VEHICLE	☐
☐	☐

22. Where Was Person or Vehicle When First Seen? _____ 23. How Far Away? _____ Ft.
24. What Was Our Speed at That Time? _____ M. P. H. 25. How Far from Contact When You Applied Brakes? _____ Ft.
26. At Time of Contact, What Was Our Speed? _____ M. P. H. 27. After Contact, How Far Did Our Vehicle Travel? _____ Ft.
28. At Time of Contact, What Gear Were You In? 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ R ☐ 29. Did You Blow Horn? _____ 30. When? _____
31. How Did You Stop Your Vehicle? Foot Brakes ☐ Emergency ☐ Both ☐

32. OTHER VEHICLE

Name and Address of Owner _____
Name and Address of Operator _____
Make of Vehicle _____ Year _____ Body Type _____ Reg. No. _____ Opr. Lic. No. _____
Describe Damage _____
Where Can Vehicle Be Seen _____ Estimated Cost of Repairs $ _____
Occupants' Names and Addresses _____

33. PROPERTY DAMAGED OTHER THAN AUTO

Owner _____ Address _____ Tel. No. _____
Kind of Property and Extent of Damage _____
Estimated Cost of Repairs $ _____

(over)

THE How CONTINUED

FORM B, both sides of which are shown below, details full account of accident. Standard 8½ x 11 in. sheet

CAUSE AND PREVENTION OF VEHICLE ACCIDENTS—SUPPLEMENTAL REPORT

[Form C]

Bureau of Highway Safety of

THE NATIONAL COUNCIL OF PRIVATE MOTOR TRUCK OWNERS, INC.

National Press Bldg., Washington 4, D. C.

DRIVER_____

DATE OF ACCIDENT_____ 194 ACCIDENT NO._____

Fill this out 24 hours after accident and turn it in to Supervisor.

What do you think were the CAUSES of this accident?_____

Just how did you contribute to this accident?_____

What would you do NOW to prevent a similar kind of accident?_____

Date_____ 194 Signed_____

Comments by Superior_____

Date_____ 194 Signed_____

FORM C (also 8½ x 11 in.) is used for driver's candid opinion after 24-hour "cooling off" period

Forms Available

You may purchase the forms recommended in this installment from the National Council of Private Motor Truck Owners, Inc., 1015 National Press Building, Washington 4, D. C. Please address requests for further information to Leon F. Banigan, Managing Director.

FORM D, for permanent record of driver's accidents, is same size but printed on heavy stock for durability

INDIVIDUAL DRIVER'S RECORD OF ACCIDENTS—CAUSES—COSTS

[Form D]

Bureau of Highway Safety of

THE NATIONAL COUNCIL OF PRIVATE MOTOR TRUCK OWNERS, INC.

National Press Bldg., Washington 4, D. C.

NAME_____

HOME ADDRESS_____

DATE EMPLOYED_____

DATE OF BIRTH_____

SOCIAL SECURITY NO._____

TYPE OF VEHICLE OPERATED_____

ROUTE NO._____

TERRITORY_____

Date of Accident	Accident No.	Type of Accident	Responsibility	Vehicle Costs: Our Damage	Vehicle Costs: Paid Others: P. I.	Vehicle Costs: Paid Others: P. D.	Comp. Costs: Medical	Comp. Costs: Comp.	Vehicle or Comp. Reserves	Total Cost Including Reserves	Time Lost	Causes

SAFE DRIVER'S AWARD

_____ AWARD FROM_____ TO_____ _____ AWARD FROM_____ TO_____

_____ AWARD FROM_____ TO_____ _____ AWARD FROM_____ TO_____

_____ AWARD FROM_____ TO_____ _____ AWARD FROM_____ TO_____

_____ AWARD FROM_____ TO_____ _____ AWARD FROM_____ TO_____

_____ AWARD FROM_____ TO_____ _____ AWARD FROM_____ TO_____

be made between your accident rate and that of other fleets, the following accepted form and formula can be used:

FORM—(for recording vehicle accident frequency)

Period .....

Total Accidents	Total Mileage	Frequency Rate

100,000
5
125,000 | 500,000 | 4.0

FORMULA—Multiply the total number of accidents over a given period by 100,000 and divide by the total mileage operated during the same period. (For example—5 accidents multiplied by 100,000 divided by an actual mileage of 125,000 equal a frequency rate of 4.0).

From all of the above summarized information, preserved in a permanent master record, a wealth of accident experience data will be made available to the motor fleet owner which will permit him to discover currently which unsafe acts and conditions are the most common causes of accidents in his entire fleet, and to consequently place special emphasis on appropriate remedies.

The foregoing data for the maintenance of an adequate system of accident reports and records will enable you to properly evaluate *your own* operations and initiate *your own* highway safety program through appropriate precautionary or preventive action.

VEHICLE ACCIDENT ANALYSIS SHEET

[Form E]

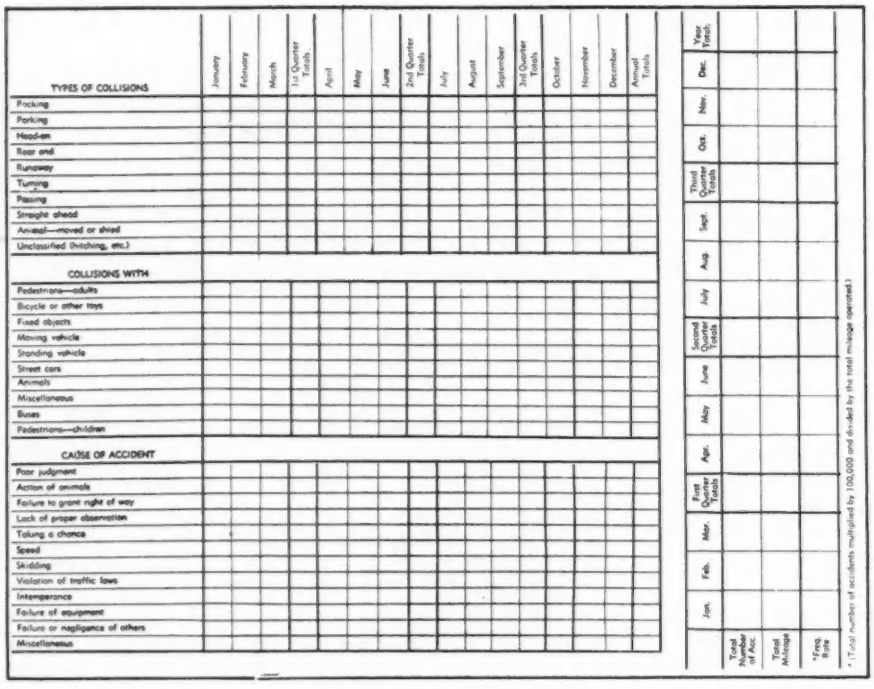
Bureau of Highway Safety of

PERIOD SHEET No. COMPANY PLANT or BRANCH

Date	Vehicle No.	Employee's Name	Type of Operation	Type of Accident	Cause of Accident	Responsibility 1 2 3 4

(See over for detailed breakdown of types and causes, etc.)

Responsibility Code—
1. No fault of driver.
2. Driver partially at fault.
3. Driver totally at fault.
4. Employer responsible.


TYPES OF COLLISIONS	January	February	March	1st Quarter Totals	April	May	June	2nd Quarter Totals	July	August	September	3rd Quarter Totals	October	November	December	Annual Totals
Parking																
Head-on																
Rear end																
Runaway																
Turning																
Passing																
Straight ahead																
Animal—moved or shied																
Unclassified (hitching, etc.)																
COLLISIONS WITH																
Pedestrians—adults																
Bicycle or other toys																
Fixed objects																
Moving vehicle																
Standing vehicle																
Street cars																
Animals																
Miscellaneous																
Buses																
Pedestrians—children																
CAUSE OF ACCIDENT																
Poor judgment																
Action of animals																
Failure to grant right of way																
Lack of proper observation																
Taking a chance																
Speed																
Skidding																
Violation of traffic laws																
Intemperance																
Failure of equipment																
Failure or negligence of others																
Miscellaneous																

	Jan.	Feb.	Mar.	First Quarter Totals	Apr.	May	June	Second Quarter Totals	July	Aug.	Sept.	Third Quarter Totals	Oct.	Nov.	Dec.	Year Totals
Total Number of Acc.																
Total Mileage																
*Freq. Rate																

* Total number of accidents multiplied by 100,000 and divided by the total mileage operated.)

FORM E (both sides shown above) provides accident analysis for entire fleet. Standard 8½ x 11 in. sheet

Safety Instructions

In Highway Safety Program for Commercial Vehicle Operators

THIS ISSUE: Accident Reports and Records
NEXT ISSUE: Human Engineering
PRECEDING ISSUES:
- Management Responsibility
- Driver Responsibility
- Driver Selection, Training and Supervision

SUCCEEDING ISSUES:
- Visual Information . . . Contests . . . Awards
- Group Safety Meetings . . . Development of Safety Committees
- First-Aid Training
- Conservation of Equipment
- Unusual Highway Hazards; Winter Driving; Holiday Hazards; Night Driving; Highway-Railroad Grade Crossings
- Fire Prevention
- Safety Through Courtesy . . . Defensive Driving

Your Own Highway Safety Program

This and other installments are punched marked for removal and insertion in standard three-ring binder. Save them! Use them!

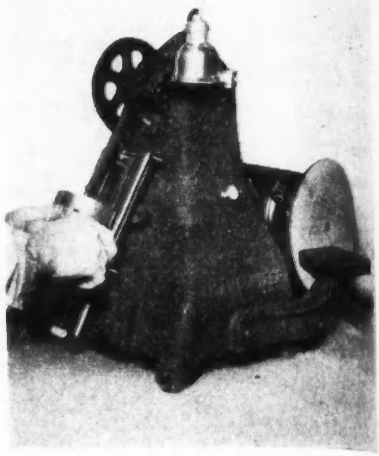
Copyright, 1949, by National Council of Private Motor Truck Owners, Inc.

1948 New Truck Registrations by Makes by States*

STATE		Auto-car	Brock-way	Chev-rolet	Dia-mond T	Divco	Dodge	Fed-eral	Ford	FWD	GMC	Inter-na-tional	Mack	Osh-kosh	Reo	Ster-ling	Stude-baker	Ward La France	White	Willys	All Others	Total
Alabama	October	1		1005	12		246	1	555		365	297	20		23		148		13	176	9	2,871
	10 Mos.	1		6268	60	21	1686	30	4402		1503	2102	135		205		731		126	1234	40	18,544
Arizona	October			124		4	68	3	97		37	13			9	2	26		2	20	2	407
	10 Mos.	3		1414	7	22	607	15	1196	2	360	379	11		82	7	341		46	292	37	4,821
Arkansas	October			526	9		186		417	1	138	93	2		13		81		8	111	8	1,593
	10 Mos.			5683	96	1	1558	27	4298	4	1138	1586	44		285		676	1	83	1633	17	17,130
California	October	10		1590	33	46	949	6	1143	1	555	412	40		15	3	378		40	266	90	5,577
	10 Mos.	180	24	14953	337	398	8179	61	11756	57	5083	5123	279	6	205	84	3671		378	3248	567	54,589
Colorado	October			334	19	2	115	6	227	3	103	142	1		3		33		8	111		1,107
	10 Mos.	7		3040	126	39	1099	57	2487	36	725	1571	18		75		446		52	985	11	10,774
Connecticut	October	8	8	233	12	10	82	13	165		72	131	21		8		40		5	100	5	913
	10 Mos.	77	70	1938	131	119	778	76	1631	11	523	944	167		70	8	436		88	693	44	7,804
Delaware	October	1	1	79	3	1	65	1	38		27	31	8		2		10		3	13		283
	10 Mos.	10	12	782	23	16	383	3	690		224	361	22		13		107		24	101	19	2,790
Dist. of Columbia	October	2	1	98	3	6	31	2	85		28	39	16		2		15		4	31	1	364
	10 Mos.	15	6	811	42	98	324	23	819		308	448	49		37	1	106		28	180	15	3,308
Florida	October	1		525	8	5	145	1	434		105	126	27		6		76		9	73	13	1,554
	10 Mos.	20		5630	110	32	1774	56	3910	3	965	1482	163		124		773	2	154	1264	155	16,617
Georgia	October	2		786	7		228	4	373		135	190	14		7		91		8	104	4	1,953
	10 Mos.	4	1	8007	247	6	2372	58	6535	3	1474	2999	212		283		1137		190	1766	50	25,342
Idaho	October			178	9	1	62	1	114		78	99	23		13		63		5	99	5	750
	10 Mos.	1		1810	90	10	723	28	1406	4	558	908	48		139		595	2	50	797	53	7,222
Illinois	October	8		1213	61	20	398	15	656	4	312	547	19		36	1	171	1	37	221	8	3,728
	10 Mos.	150	9	13997	998	345	5043	200	8877	22	2760	7475	353		712	9	2194	4	584	3305	255	47,292
Indiana	October		1	287	13	4	115	9	285		127	163	11		8		88		35	78	5	1,229
	10 Mos.	3	19	6028	249	157	2251	107	4842	6	1689	3496	116		246		1398		384	1617	175	22,783
Iowa	October			617	25	2	207		375	1	152	290	8		10		123		18	150	1	1,979
	10 Mos.	2		6553	360	56	2273	29	5106	15	1210	3486	107	3	297		1026	2	205	1725	28	22,483
Kansas	October			639	9		146	3	274	1	121	153	4		12		118		8	71	4	1,563
	10 Mos.	1	3	6964	199	23	1754	123	4360	4	1066	2487	28		258		1003		106	1050	51	19,480
Kentucky	October	4		526	11	5	130	5	357		179	175	5		13		59		10	187	4	1,670
	10 Mos.	20		5239	231	28	1479	131	4056		1189	2147	79		317		615	6	101	2871	56	18,585
Louisiana	October			455	15	3	138	3	372	2	98	146	11		8		83		6	86	18	1,444
	10 Mos.	4		4591	144	29	1391	15	3787	8	832	1596	77		100		661		98	1123	100	14,556
Maine	October			197		3	51	2	146		61	55	8		17	1	24		2	58	2	627
	10 Mos.	2	18	1875	8	27	524	34	1529	1	548	849	67	1	126	6	322	1	20	438	19	6,415
Maryland	October	8	13	341	4	6	123	2	203		65	163	16		13		40		21	52	1	1,071
	10 Mos.	55	84	3644	69	64	1255	75	2490	8	682	1450	162		140	5	445	3	118	603	28	11,380
Massachusetts	October	12	11	366	27	37	190	4	354	1	126	206	26		16	8	63	1	32	54	4	1,538
	10 Mos.	115	128	3790	189	401	1825	43	3969	17	1027	1970	296	5	146	57	756	14	172	691	63	15,674
Michigan	October	6		905	13	31	463	12	887		391	277	6		15		160		32	163	5	3,366
	10 Mos.	42	42	9312	181	334	4516	199	9012	6	2920	2876	131		384	1	1306	5	361	2148	100	33,874
Minnesota	October	6		483	21	4	186	4	325	1	131	239	2	2	11		112	2	36	96	2	1,663
	10 Mos.	52	1	5785	255	78	2266	158	4790	31	1163	3374	118	11	198	9	1133	12	232	1265	48	20,977
Mississippi	October			587	8		172		389		162	153	9		6		77		6	168	3	1,740
	10 Mos.			5258	70		1323	22	3808		1067	1528	105		144		550		64	1097	25	15,061
Missouri	October			788	14	2	299	1	515		174	220	2		10		79		29	96	4	2,233
	10 Mos.	4	7	8872	193	144	2904	27	6371		1731	3243	80		167		980	1	276	1900	74	26,984
Montana	October			221	24	1	77	6	189	4	72	88	1	1	8		41		7	146	4	890
	10 Mos.	7		2322	166	8	894	75	1949	11	581	1307	28	2	166		489	5	61	1195	31	9,297
Nebraska	October		2	347	33		149	2	241		110	150	5				54		12	98	2	1,203
	10 Mos.		2	4059	366	6	1504	32	2978	10	821	2383	75	1	83		689		119	1357	29	14,514
Nevada	October			47			29		31		10	15			1		6		1	10	1	151
	10 Mos.		1	394	14	1	216	2	327	4	115	162	4		5		125		5	99	10	1,484
New Hampshire	October	1	2	80	2	6	24	1	57		20	29	6		3		9		1	20		261
	10 Mos.	6	13	766	15	34	308	5	685	1	180	285	44		30	2	119		14	205	12	2,724
New Jersey	October	7	23	559	35	55	243	8	349		228	203	48		9	2	101	1	43	134	11	2,059
	10 Mos.	175	337	5316	348	366	2130	130	4136	20	1990	2550	536		173	9	980	12	321	1494	127	21,130
New Mexico	October			188	3		62	1	123		41	49	4		2		24		2	31	3	533
	10 Mos.	2		1786	45	4	496	19	1149	2	361	548	17		23		220		37	256	19	4,984
New York	October	62	64	1359	82	77	845	28	945	9	473	740	137	5	58	7	289	8	90	324	51	5,653
	10 Mos.	505	944	11890	1012	821	7183	427	9686	109	4445	6928	1661	58	810	48	2449	141	978	3895	449	54,239
North Carolina	October	1		694	7	12	261	7	568		113	241	47		14		137		34	180	12	2,328
	10 Mos.	42	2	7527	94	59	2568	69	5890	135	919	2096	487		203	2	1087		260	1912	226	23,578
North Dakota	October			335	21		70	4	192	1	56	91	10		1		51		2	78		912
	10 Mos.			1866	132		639	61	1666	6	341	1278	43	1	71		404		27	572	3	7,110
Ohio	October	28		1135	43	84	436	19	805	1	467	626	29		28		202	1	54	179	12	4,149
	10 Mos.	109	20	11186	334	371	4694	206	8921	27	3060	5587	357		459	1	1782	5	828	2675	210	40,832
Oklahoma	October	1		622	12	6	173		429		100	202	5		13		78		15	138	1	1,795
	10 Mos.	4		5787	56	40	1734	25	4603	45	979	2671	43		221		703	1	144	1442	41	18,539
Oregon	October	8		293	5	1	150	5	179		118	116	9		8	2	68		7	124	24	1,117
	10 Mos.	65	1	3348	104	20	1779	62	2433	6	1204	1727	130		108	27	836		175	1229	299	13,553
Pennsylvania	October	40	97	1279	62	13	681	17	915		475	584	110		49	4	269		98	309	25	5,027
	10 Mos.	358	639	12343	662	128	6065	287	10605	12	4028	6354	1087	25	635	47	2581	5	1056	3552	278	50,747
Rhode Island	October	8	1	91	7	3	46		73		19	34	3		2		6		11	19	2	325
	10 Mos.	95	26	906	74	137	455	10	738		270	584	53	1	66	7	195		77	225	35	3,954
South Carolina	October			360	5		74	3	198		63	85	12		3		45		16	72	1	937
	10 Mos.	2		3898	42	5	1072	17	2553		609	800	85		110		376		93	721	43	10,426
South Dakota	October			173	18		87	2	66		38	83	2		2		22			86	4	583
	10 Mos.			1534	143	4	695	44	1227		384	1386	17		105		334		26	837	24	6,740
Tennessee	October			662	5		161	6	424	1	264	175	8		9		97		12	131	2	1,957
	10 Mos.	8	4	7497	170	37	2098	150	5480	3	2098	3000	195		270		979		253	1601	101	23,944
Texas	October	3		1921	27	22	698	3	1175		458	610	33		34		277		63	516	74	5,914
	10 Mos.	51	20	18259	373	155	6355	103	13730	7	3677	7295	320		439		2528	2	703	4720	426	59,163
Utah	October			106	2	3	44	5	41		43	52	2		5		26		2	41	1	373
	10 Mos.			1357	86	18	582	30	1122	6	436	657	35		42		304		39	436	48	5,178
Vermont	October		1	110	2	2	29		581		228	29	2		6		28		2	46	1	344
	10 Mos.	6	17	859	26	14	296	21	183	1	92	548	52	6	57	3	226	10	28	438	24	3,755
Virginia	October	3	1	856	10	2	179	7	472		126	192	27		5		79		21	119	2	1,901
	10 Mos.	35	22	6321	126	77	1907	106	5357	6	1166	1966	139		169		798	2	204	1393	82	19,876
Washington	October			359	7	11	166	1	727		118	139	10		8	1	64		28	76	7	1,722
	10 Mos.	18		3867	135	127	1877	26	3847	11	1152	1966	113		140	21	938		137	983	124	15,482
West Virginia	October			241	3	4	138	3	179		112	82	3		13		31		5	130	2	946
	10 Mos.	23	39	2718	73	28	1130	83	2232	7	964	917	140		130	1	373	7	153	1412	45	10,475
Wisconsin	October	1		507	20	19	156	2	367	5	127	194	7	4	13		72		17	117	3	1,631
	10 Mos.	26		5596	269	136	1967	95	4114	55	1208	2988	124	30	275	17	873	1	261	1455	65	19,555
Wyoming	October			75	9		36	2	52	1	27	42	1		1		24	1	2	76	1	350
	10 Mos.	1		1077	96	4	409	8	847	5	192	541	7		32		226	4	19	642	14	4,124
Total	October, 1948	232	226	25302	780	513	9809	230	17641	37	7448	9211	820	12	571	31	4258	15	922	5782	444	84,284
Total	10 Months, 1948	2306	2511	254723	9376	5048	97320	3688	199233	727	62195	110404	8659	150	9573	372	42012	248	9958	66570	4795	889,868
Total	October, 1947	378	412	25970	1080	612	11801	598	17142	102	4672	11390	1215	11	1080	64	3889	42	1275	4822	612	87,167
Total	10 Months, 1947	3751	3611	183352	8854	4118	108260	4985	170582	998	40115	95622	9128	199	10926	498	34935	441	11010	40488	5832	737,705

* Data from R. L. Polk & Co.

The Watervliet method uses an air driven hammer to peen piston to original size



The Ramsey method expands, resizes, reshapes with an electric peening hammer

A New Look at
Piston Resizing

Manufacturers show how to get more miles from worn pistons with modern, improved resizing methods

In this, another product "round up," manufacturers show how their piston resizing methods increase piston life, cut oil consumption, improve ring seal and reduce maintenance costs. The process is done by peening, heating, knurling or a combination of these methods, in most cases by the jobber, although some machines are available to the fleetman.

IN a move to keep fleetmen abreast of the newest developments in piston reconditioning, CCJ has made a study of the various resizing methods offered by manufacturers. Here is the story:

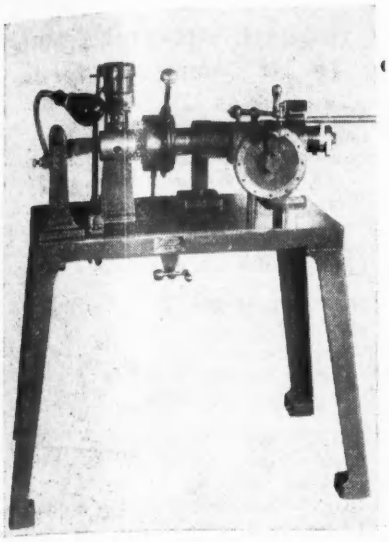
Piston resizing is advocated in order to reduce piston-to-cylinder clearance, to stabilize the pistons, thus decreasing blow-by, ring wear and oil consumption. With this process extra miles can be obtained before new pistons or cylinder reconditioning is necessary.

It is found that three types of resizing methods are generally employed—peening, heating and knurling. Several advantages are given for each method; all are claimed to return pistons to their approximate original clearances. While this is not a substitute for new pistons, manufacturers say it is well worth the cost.

Most of these machines are rented or leased, with a monthly charge being made and/or a flat rate per piston being established. Some are distributed to jobbers only, while others are sold outright.

Kopper's Koetherizing

The Koetherizing process blasts the inside of the skirt of the piston with 1/16-in. steel shot and by means of this cold working, builds tension into the skirt of the piston restoring the



The Perfect Circle machine processes the skirt diameter by knurling and provides a surface with less tendency to scuff

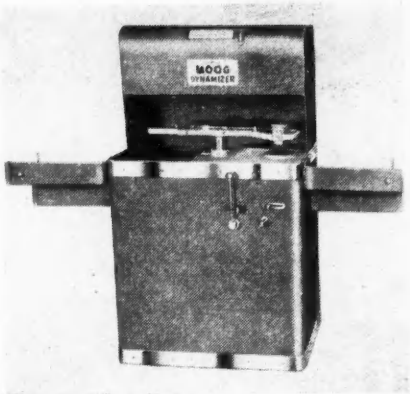
original cam or shape and preventing collapse in the future.

Most aluminum pistons when used in engines tend to lose their cam to some extent and, therefore, the clearance on the thrust face is greater than that recommended by the engine manufacturer. On cast iron pistons, cylinder wear should be compensated for when the engine is reringed by returning the piston to approximately its original clearance on the thrust face.

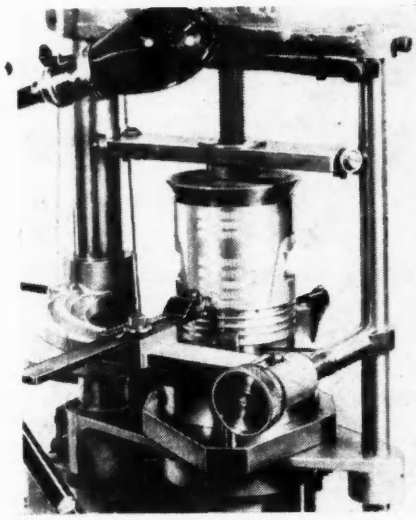
The Koetherizing process is a controlled process and the pattern of the shot striking the piston is determined by the machine and not by an individual operator. This removes the human element in determining where the skirt of the piston should be blasted. Because of this the Koetherizing process gives more uniform control and finished piston size can be controlled to ±.0005 in. The Koetherizing process, because it is performed while the piston is cold, is permanent and is not affected by heat.

Any man who can read a micrometer can be trained to operate the Koetherizing machine in from 30 min to 1 hr, but his speed will increase as he becomes more familiar with the machine. The machine is not for sale, but is leased on a rental basis and the account is billed on the basis of the number of pistons Koetherized.

(TURN TO PAGE 192, PLEASE)

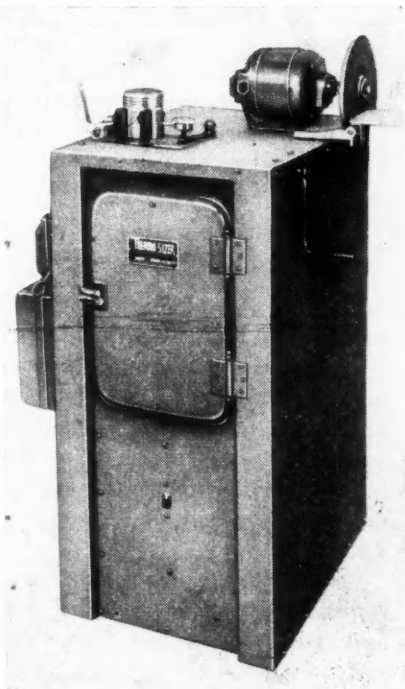


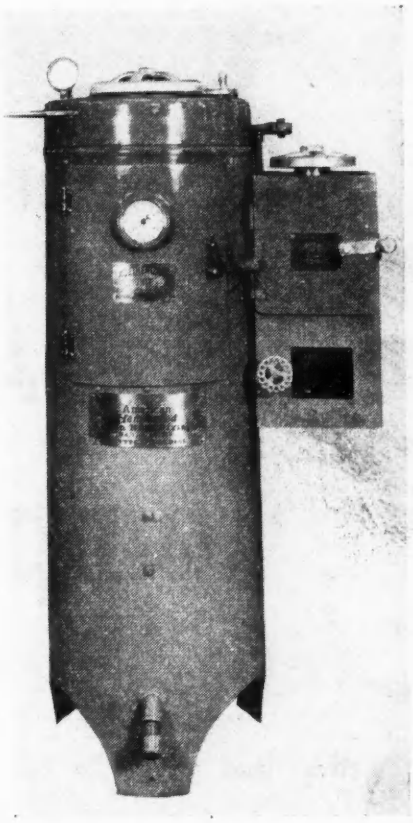
The Moog Process uses heat to increase piston diameter, with a gage to control expansion



The McQuay-Norris process makes use of an internal expanding tool, after the skirt is heated, to return piston to original diameter

Below. Wilkening uses heat to "heat-shape" worn and collapsed skirts. Pistons can be permanently expanded as much as .030 in.





American Hammered's "Koetherizing" involves a heating process and controls expansion to within .0005 in.

Hastings' method increases piston diameter by knurling which raises metal on major and minor thrust surfaces

Servicing Air Compressors

A practical guide to lubrication, cleaning, adjustment, periodic service and installation, developed from suggestions laid down by manufacturers to aid the fleetman in obtaining more satisfactory service from air compressors

TROUBLE SHOOTER'S GUIDE To Air Compressor Service

I. Knocking
- Carbon on piston or in head
- Loose or worn wrist pin
- Worn connecting rod bearing
- Worn main bearing
- Valve assemblies improperly installed
- Lack of lubrication
- Loose pulley on compressor or motor

II. Pumping oil
- Clogged air strainer
- Worn piston rings
- Improperly installed rings
- Oil too low in viscosity

III. Overheating
- Lack of oil
- Sticking valves
- Insufficient air circulation around unit
- Paint on cylinder head
- Dirty, carbon coated valves
- Sticking check valve
- Too heavy oil
- Broken exhaust valve
- Clogged air strainer
- Dirt accumulation on unit
- Unit too small or operating at too high pressure

IV. Loss of efficiency
- Worn rings
- Damaged, broken piston
- Scored cylinder walls
- Iverheating
- Leaking valves
- Stuck valves
- Air leak in lines
- Loose fan belt
- Water in air tank

V. Excessive pressure drop
- Compressor too small
- Leakage in air line
- Air line too small
- Defective compressor or air regulator

VI. Excessive moisture formation
- Defective transformer
- Main line near steam pipes
- Leaking head gasket (water-cooled type)
- Unit located in damp place
- Air lines not properly trapped
- Air receiver not drained properly

Precision Tools for the Modern Shop

The eighth of a series of articles on selecting, installing and servicing power shop tools and equipment. Previous stories covered electric and pneumatic tools, hand tools, hydraulic shop equipment.

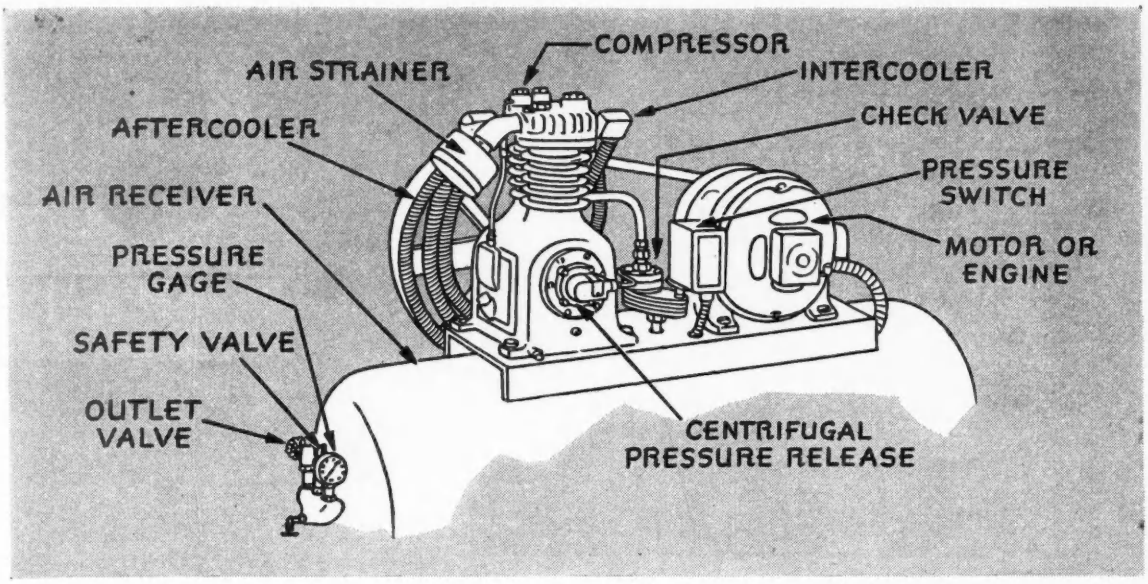
This section has provided operators and mechanics with valuable data which can be used for instructional purposes, for maintenance help or for improving the operation of this equipment. Tips on servicing both electric and acetylene welders will follow in February.

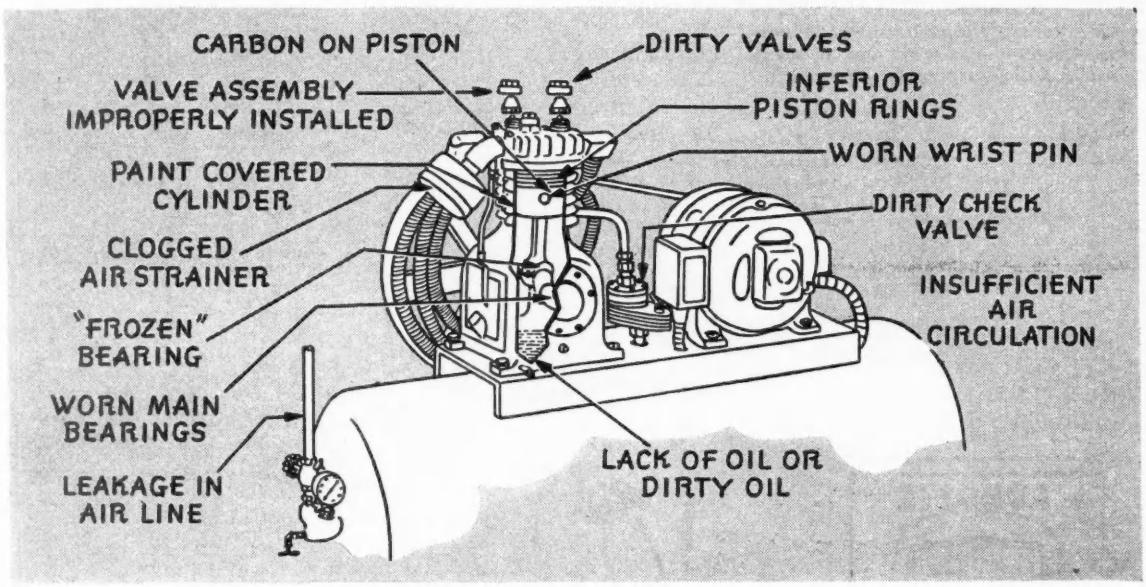
SERVICE department records of air compressor manufacturers bear out the fact that users of compressors pay little or no attention to the servicing of these units. Lack of oil is probably the greatest cause of premature failure. Manufacturers insist that there will be little need to replace rings, bearings, rods, pistons, during the life of the unit if it is properly serviced.

Lubrication checks should be made daily under normal operation, and the crankcase should be drained and refilled with a good grade of SAE 10 engine oil in monthly periods. Manufacturers' recommendations should be followed closely for the type and grade of oil. In some installations it may be necessary to use different lubricants for the compressor cylinder, the crankcase and the power cylinders.

Cleaning is an important practice and one frequently overlooked in the fleet shop. The suction filter should be removed and cleaned every month. The filter should be washed with a non-inflammable liquid and allowed to dry before being replaced. It is just as important to keep the outside of the compressor free of oil and grease formations. Oil and dust accumulations will deter the proper heat dissipation, and loss of efficiency will be experienced. Such units operating under high temperatures are extreme fire hazards if not kept clean.

Water jackets of the water-cooled type should be washed out frequently, and a water softener should be used to preclude the formation of scale. In air-cooled types the fins should be brushed out regularly and





TOP. Guide to compressor nomenclature. ABOVE. Critical points where breakdowns commonly occur With poor operation the mechanic should make a systematic check of each of these spots. See trouble guide

kept free from dirt and corrosion.

Valves should be inspected frequently and cleaned of carbon formations. The presence of deposits on the valves may indicate that the air filter is dirty, that the unit is operating under high temperatures or that the oil is unsuitable. Ports, discharge lines and tubing should be removed and cleaned when indications point to obstructions or loss of compressor efficiency.

Any leaks in air lines, compressor valves or fittings should be spotted during the inspection. Leaks can be spotted with soap suds. If tightening

by M. K. Simkins
Technical Editor
Commercial Car Journal

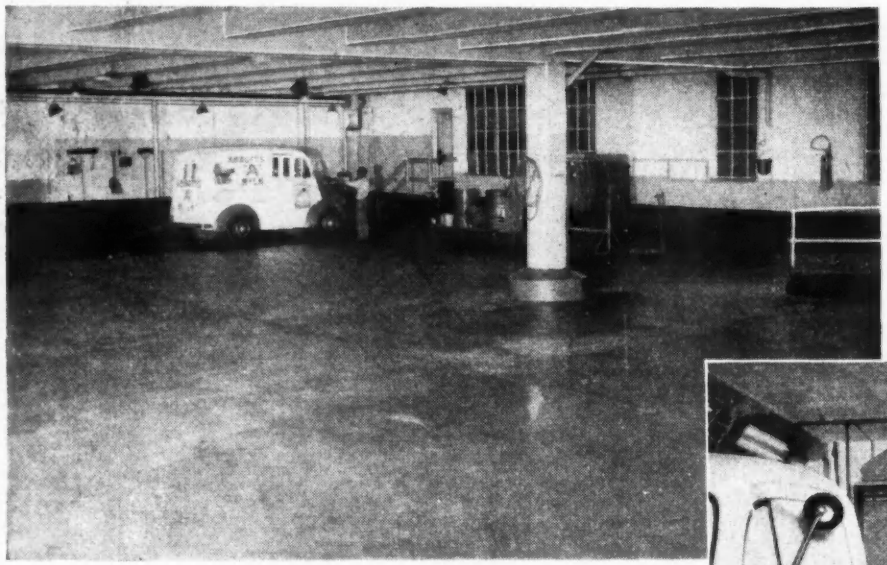
does not stop the leak, it may be necessary to remove the line and reflare the connection or polish the seat. If the compressor is slow in building up, the discharge valves may need cleaning and resetting.

The belt drive should be kept at proper tension. Any evidence of fraying or burning should call for a new belt. Bearings should be inspected for wear and evidence of overheating. When worn parts are found, they should be replaced immediately, as loose bearings, damaged drives, defective valves will soon give rise to costly breakdowns.

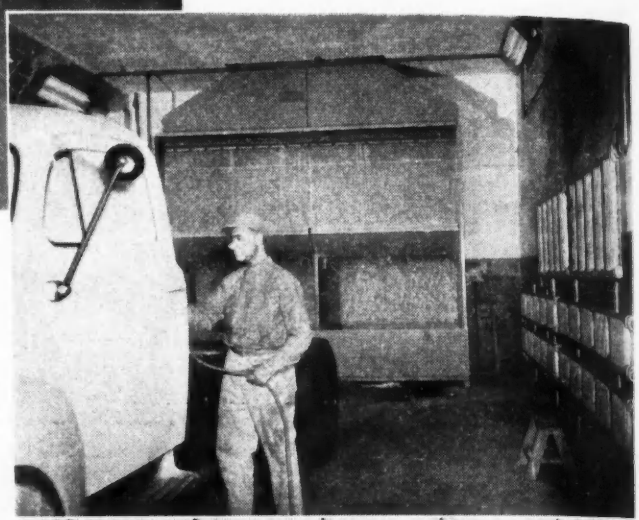
The trouble shooting guide on these pages will aid the mechanic in locating common compressor troubles. Causes of these 6 common failures will indicate the proper steps to take.

Here is a periodic service schedule which should be followed in every fleet:

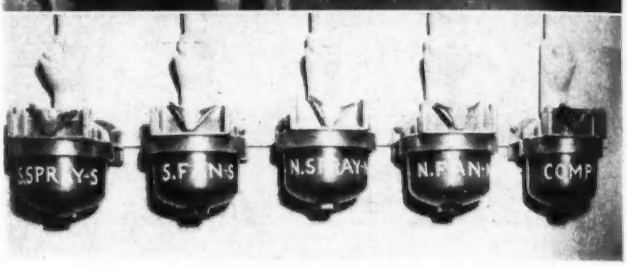
(TURN TO PAGE 172, PLEASE)

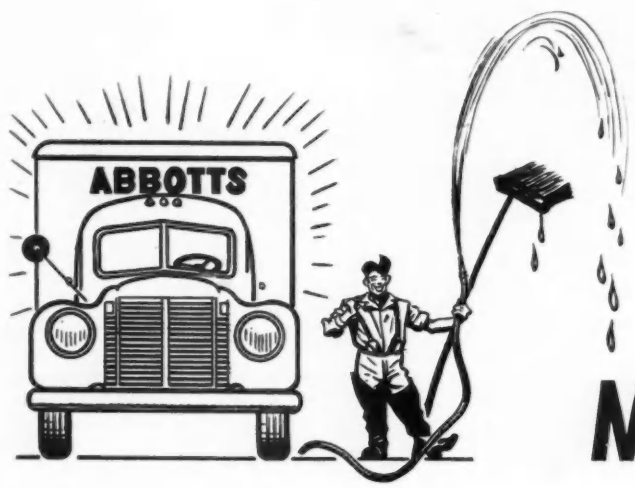


ABOVE Unretouched photo of typical parking garage shows immaculate condition. Note chain rack and washing area with full equipment in far corner



RIGHT Portion of paint shop shows one of two DeVilbiss water sprays and explosion-proof fluorescent lighting. Lower photo shows controls.





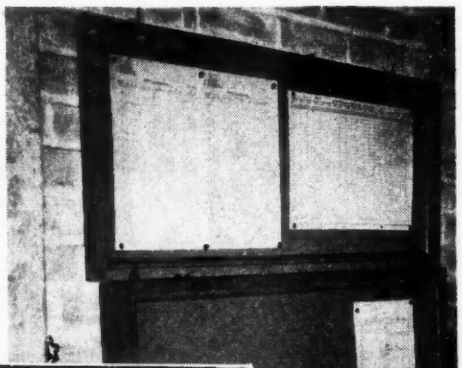
Much Ado "Abbott"

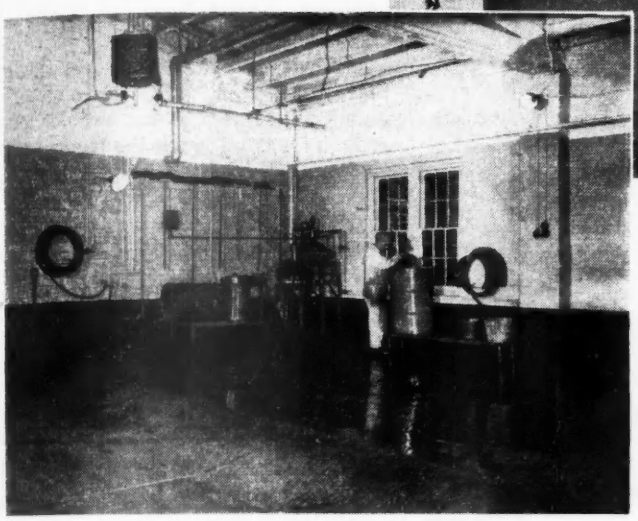
Big dairy fleet keeps its trucks and shop areas in extraordinary conditions by strict

By Ed Schultz
Superintendent of Fleet Maintenance
Abbotts Dairies, Inc., Philadelphia

AS THE EDITORS have so aptly stated (see box p. 98) there is little about our methods of maintaining vehicle and shop cleanliness that is either new or different from accepted standards. What variance there is, and what results we have accomplished, stem almost entirely from a will on the part of all our shop personnel to do each job RIGHT.

Original painting is naturally the number one job in any appearance program. Ours is done in a small company-owned shop located in South Philadelphia where two row houses have given way to an unobtrusive shop building. But inside there is a very modern DeVilbiss dust-proof spray booth equipped with flush-type, explosion-proof lighting, forced ventilation and even a water-wash exhaust system. All painting is done here including the new vehicles, repaint jobs and even touch-up work.





***ACROSS TOP** Typical units include door-to-door Divco, 121-case store delivery and 200-case wholesale types*

***LEFT** One of many wash racks showing pump, soap tanks and equipment. For details of bulletin board see below*

MOTOR WASH

TRUCK NO.	NOV.	DEC.	JAN.	TRUCK NO.			
10	11/11	X	X				
12	X	12/6	X				
14	X	X	1/16				

W - Washed Truck
T - Tires pumped up
B - Batteries flushed

MONTH OF DECEMBER

Truck No.	11/29 to 12/5	12/6 to 12/12	12/13 to 12/19	12/20 to 12/26	12/27 to 1/2
10	W-MD-12/1 T-MD-12/2 B-MD-12/2	W-MD-12/6 T-MD-12/7 B-MD-12/7	W-CB-12/14 T-CB-12/14 B-MD-12/16	W-MD-12/22 T-MD-12/23 B-MD-12/23	W-CB-12/24 T-CB-12/24 B-CB-12/24

***ABOVE** Once every three months, engines are washed according to schedule*

***LEFT** Every week each truck is washed, tires and batteries checked. This schedule tells when each job was done*

CLEANLINESS

adherence to ordinary but carefully planned routines

DuPont Dulux enamel is the standard medium. The ultra white and brilliant red were both originally developed for Abbotts; later given standard numbers and made available to all comers. All lettering from the two-color sign work (letters in red, shading in medium green) to the identifying truck numbers (in black) are accomplished through the use of decals, applied by the same expert five-man crew who handle the spray guns.

New trucks with bodies attached—such as the Divco type—are delivered to the paint shop in factory prime, processed in a normal manner. It takes about 20 man-hours for an average job complete with two coats of enamel in two colors and decals on the outside and two coats of blue on the inside.

In the case of larger vehicles with custom bodies, new chassis are delivered to the paint shop before having bodies mounted in order that the back of the cab only may be sprayed. This routine is followed even though bodies are sometimes mounted as far away as 350 miles. After the bodies are mounted the vehicle is returned to the paint shop for complete painting of both body and chassis.

People often ask us why the entire chassis is not painted before the body is mounted. The answer is quite simple. Time studies have shown that it is cheaper that way. When we painted the whole chassis we found that no matter how careful the body builder was, there was a good deal of time required to clean up and

(TURN TO NEXT PAGE, PLEASE)

Much Ado "Abbott" Cleanliness

Continued from Page 97

touch up the chassis after the body was in place. By doing the chassis all at once after the body is in place, is can be done quicker even though it is somewhat less accessible.

All Abbotts trucks are undercoated at time of initial painting. We began this practice just after the war and have yet to have a failure or any need for reapplication.

Repaint at 18 to 20 Months

AFTER a normal period of 18 to 20 months, trucks are routed back to the shop for repainting. This period is flexible and often the trucks run for two years and more between painting. But on the average it has been found that the additional preparation needed as occasioned by the longer period more than offsets the savings effected by the delay.

For repainting, bodies are not stripped, but merely hand and power-sanded to a smooth finish with special care taken to clean out and putty the cracks and edges. Once ready, normal spraying and lettering procedures follow, the same as for new vehicles.

Between regular paintings, trucks are routed to the paint shop as often as needed for retouching. So mindful of cleanliness and appearance are Abbotts' drivers that (1) retouching is seldom necessary and (2) when it is, drivers are the first to ask for it —usually get it.

Washing Schedules

NEXT in importance to good painting is good washing. We wash each truck normally once a week, pulling one-sixth of the fleet in rotation to make up a six-day washing schedule. In each parking area of each garage (i.e., there are three such areas at the central milk fleet garage) is a wash rack consisting of a well-drained floor area, a high pressure hose (air and warm water) and at least two 55 gal. drums. One of the drums contains a concentrated liquid "soap." The one we use is called Vita-Kleener. It is one of those modern liquid wash solutions which is actually not soap at all, but contains various cleaning elements and a wetting agent which prevents streaking when the truck is air-dried. The other drum is for the soap and water mix.

The working soap solution is made up at the beginning of each wash period by mixing one part soap concentrate with 50 parts of water in the second drum. The mixed solution is then drawn off in 12-quart buckets to be used as needed.

The wash procedure consists of four steps: (1) high pressure hose truck complete including inside, outside and under carriage; (2) hand scrub with a round, short-handled, soft-bristle brush dipped in the bucket of soap solution; (3) rinse with high-pressure hose, and (4) dry windows and windshield with chamois and allow rest of vehicle to air dry—often back at its regular parking area.

In particularly bad weather an extra wash is scheduled at midweek, but to save time these extra washes are considerably less extensive; do not include interiors.

On an average, we have one washer for each 40 trucks and a normal regular wash takes about half an hour. Thus on a six-day schedule each man has plenty of time left over for cleaning shop.

Every three months each vehicle, by means of a separately posted schedule, is given an extra special scrub down that includes engine, engine compartment, and underside surfaces. The same washers handle this schedule, using a concentrate of one part Gunk and 10 parts kerosene as the cleaning agent. This is either sprayed on or brushed on at the option of the washer. We have found that many prefer the brush application, to avoid the excessive fumes of the spray equipment.

Drivers are not responsible for appearance maintenance in any way except that they are required to keep the inside of the vehicle neat. This means that clothing must be placed on hooks provided, records in proper carriers and broken glass removed. If products such as milk are spilled in the interior this fact must be reported at the end of the run so that an extra inside hosing may be scheduled.

No Dusting—No Waxing

THAT'S all there is to the truck appearance program. Trucks are never dusted between washes, it being company opinion that such practice can do more harm than good. Oddly, the pure white surfaces seem to show dust less noticeably than do darker surfaces. Neither are the trucks ever

(TURN TO PAGE 180, PLEASE)

GRADE A FLEET

Abbotts Dairies, Inc., of Philadelphia, is one of the nation's largest independent milk and ice cream producers. Its 616 gleaming motor trucks, painted snow-white and trimmed in fire engine red, are a familiar part of the eastern Pennsylvania and southern New Jersey scenes, and their extraordinary appearance is the envy of fleetmen everywhere.

Perhaps the most startling single fact connected with this extraordinary appearance is the more or less ordinary way in which the trucks "get that way." There are no expensive tricks. It's simply a matter of actually doing the things any good operator would concede should be done. This includes periodic painting, regular washing and an urge for cleanliness that begins in Abbotts immaculate laboratories, includes its 20 garages and shops and goes all the way to the cleaning of truck engines. We shall see in a subsequent article how Abbotts keeps even the inside of engines clean by virtually eliminating sludge.

Don't forget that dairy products are food products at the top of the list from the standpoint of susceptibility to contamination. As a high ranking Abbotts official once said, "The quality of our products is something very hard for the average consumer to measure. But anyone can gage and compare the cleanliness of our equipment. That's why we take such extra pains with it."—The Editors.

Truck Specifications Table

OF CURRENT PRODUCTION MODELS

DATA SUPPLIED BY MANUFACTURERS AND TABULATED BY

COMMERCIAL CAR JOURNAL

Key to Definitions, References and Abbreviations

DEFINITIONS

MAKE AND MODEL

Only Domestic Truck Models are listed.

OPTIONAL UNITS

For the express purpose of best fitting the truck to the individual job most of the models listed can be provided with optional engines, transmissions, axles, etc., and these models when so equipped are considered standard stock models.

CHASSIS LIST PRICE

The chassis list price applies to the minimum standard wheelbase with standard tires and standard equipment. All prices are F.O.B. factory. Chassis list price does not include the price of the Cab unless otherwise noted.

RECOMMENDED GROSS VEHICLE WEIGHT FOR NORMAL SERVICE

The Gross Weights published herewith are those supplied by manufacturers as their Recommended Gross Vehicle Weights for Normal Operating Conditions, and are based upon the Maximum Authorized Tire Size listed. In actual practice the manufacturer may either increase or decrease the gross vehicle weight rating when either favorable or unfavorable operating conditions are involved. Since the proper performance of a motor truck depends upon many factors, including grades, road conditions, etc., the gross weights that a manufacturer is prepared to recommend will vary with particular conditions, and the manufacturer's own standard of safety factors. Specific recommendations, therefore, should be obtained from the manufacturer's representative.

CHASSIS WEIGHT

The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with cowl, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in the tank. It does not include the weight of the Cab. This applies to C.O.E. as well as conventional chassis types. Exceptions are noted.

STANDARD TIRE SIZE

The standard tire size listed is that which is included in the Chassis List Price.

MAXIMUM AUTHORIZED TIRE SIZE

The tire size listed in this column is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is furnished at extra cost, if it differs from the standard size. Dual rears are understood; exceptions noted.

MINIMUM STANDARD WHEELBASE

The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based.

MAXIMUM STANDARD WHEELBASE

The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis maker.

MAXIMUM BRAKE HP.

Maximum Brake Horsepower at Given R.P.M. is actual dynamometer reading without accessories.

GEAR RATIO RANGE

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

TRACTORS

Unless giver the designation (N)—meaning not available as a tractor—all standard models may be assumed to be available as tractors. Exclusively Tractor models are designated (T).

KEY TO REFERENCES

c.f.—Cab Forward design.
c.o.e.—Cab-Over-Engine design.
(D)—Diesel-engine equipped.
(T)—Designed for tractor use only.
(C)—Converted Ford or Chevrolet Model.

(2) International Harvester—Specifications shown represent only the basic standard chassis units and standard chassis ratings in keeping with definitions established by Commercial Car Journal. Optional units not shown such as engines, clutches, transmissions, axles or axle ratios, brakes, wheels and tires, frames or frame reinforcements, optional wheelbases or any other units which make up part of the truck chassis and which International will furnish and approve from the factory as optional equipment can or will change either the ratings, chassis weight shown or performance of the truck as indicated by this list.

Also the company reserves the privileges of assigning special gross vehicle ratings for any chassis providing in the opinion of its engineering department, the type of service justifies the new rating without decreasing the safety factor designed into the truck.

(a)—Available with Two-Speed Axle designated KBS Models.

KEY TO ABBREVIATIONS

MAKES—ALL

B—Bendix
BL—Brown-Lipe.
Bu or Bud—Buda.
BW—Bendix-Westinghouse
C—Chevrolet.
Cl or Cla—Clark.
Con—Continental.
Cum—Cummins-Diesel.
Eat—Eaton.
F—Ford.
Fu—Fuller.
H—Hotchkiss.
Her—Hercules.
HS—Hall-Scott.
L—Lockheed.
LH—Lockheed front, Wagner "hi-Tork" rear.
LW—Lockheed front, Wisconsin rear.
M—Midland.
N.P.—New Process.
O or Ow—Own.
Op or Opt—Optional.
Shu—Shuler.
Spi—Spicer
T or Tim—Timken.
Tw—Timken-Westinghouse
TW—Timken-Wisconsin.
WG—Warner Gear.
Wau—Waukesha.
W or Wis—Wisconsin.
Wg—Wagner.
Ws—Westinghouse.
WW—Westinghouse or Wagner

WHEELS DRIVEN

2F—Forward unit of Rear Axle Group.
2R—Rear Unit of Rear Axle Group
4R—Forward and rear units of Rear Axle Group.
—All wheels.

BRAKES—SERVICE

Location

4—Four Wheels, front and rear.
4r—Four Wheels, rear only.

Type

I—Internal.
X—External.

Operation

A—Air.
H—Hydraulic.
V—Vacuum.
D or Dp—Dual Primary

BRAKES—HAND

Location

C—Center of double propeller shaft.
2—Rear wheels.
4—Four wheels.
6—Six wheels.
P—Back of Power Divider.
J—Jackshaft.
T—Transmission.
F—Driveshaft.

Type

D—Tru-Stop disk.
I—Internal.
M—Mechanical.
X—External.
PD—Two drums on rear of power divider.

BRAKE DRUMS

Material

a—Cast alloy iron.
A—American Car Foundry.
c—Cast iron.
Cc—Composite Front, Cast Iron in rear.
Ce—Centrifuse.
Cl—Copper iron.
Co—Composite.
D—Dayton.
E—Ermalite.
G—Gunite.
N—Nickel iron.
S—Steel.

(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drums.)

FRAME

Type

C—Channel.
T—Channel tapered front and rear.
L—Channel reinforced with liner.
B—Channel reinforced with both liner and fishplate.
P—Channel reinforced with plate.
TL—Channel tapered front and rear reinforced with liner.
D—Drop Center
Tf—Tapered front.
A—Straight section sidemembers, lined with oak inserts.
Z—Reinforced (X) member frame, box type sections.

REAR AXLE

Final Drive and Type

B—Bevel.
CD—Chain Drive
F—Full-floating.
H or Hy—Hypoid.
d—Dual range axle.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
¾—Three Quarters Floating.
½—Semi-Floating
T—Torque Tube

GEAR RATIOS

(**) Only one ratio.

Drive and Torque

H—Hotchkiss (springs).
R—Radius Rods.
L—Parallel Torque Rods
T—Torque Arm.

GOVERNOR STANDARD

Y—Yes.
N—No.

(Turn to Page 110, please)

(Continued from Page 109)

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number, Diameter and Length	Governor Standard	TRANSMISSION Make and Model	TRANSMISSION Forward Sp'ds	REAR AXLE Make and Model	REAR AXLE Gear and Type	REAR AXLE Drive & Torque	REAR AXLE Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operat'n	BRAKES SERVICE Lining Area	BRAKES SERVICE Drum Area	BRAKES SERVICE Drum Material	BRAKES Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	FRAME Type
1	Available (c.o.e.)	200			15000	5500●	7.00/20D	8.25/20	Wau BM	6–3 5/16x4 1/4	263	5.9	178	78–2800	7–2 1/2x10 1/4	N	WG T9	4	Tim E100DPH	HF	H	**	–6.20	Tim 32502H	L4IHV	314	534	a	TX		10x3x 1/4	T
2	(c.o.e.)	225			16500	6200●	7.50/20D	8.25/20	Wau BZ	6–4x4 1/4	320	5.9	235	105–3200	7–2 1/2x10 1/4	N	WG T97	4	Tim E100DPH	HF	H	**	–6.20	Tim 32502H	L4IHV	314	534	a	TX		10x3x 1/4	T
3	(c.o.e.)	250			20000	6400●	8.25/20D	9.00/20	Wau BZ	6–4x4 1/4	320	5.9	235	105–3200	7–2 1/2x10 1/4	N	Fu 5A330	5	Tim H100DPH	HF	R	**	–6.80	Tim 32502H	L4IHV	344	584	a	TX		10x3x 1/4	T
4	(c.o.e.)	400			22000	6800●	9.00/20D	10.00/20	Wau BZ	6–4x4 1/4	320	5.9	235	105–3200	7–2 1/2x10 1/4	N	Fu 5A330	5	Tim L100DPH	HF	R	**	–6.83	Tim 35000H	L4IHV	370	642	a	TX		12x3x 1/4	T
5	(c.o.e.)	500			23000	7500●	9.00/20D	10.00/20	Wau MZA	6–4 1/4x4 1/4	404	5.6	285	130–3000	7–2 1/2x12 1/2	Y	Fu 5F430	5	T m L100DPH	HF	R	**	–6.83	Tim 35000H	L4IHV	370	642	a	TX		12x3x 1/4	T
6	(c.o.e.)	550			28000	8100●	10.00/20D	11.00/20	Wau MZA	6–4 1/4x4 1/4	404	5.6	285	130–3000	7–2 1/2x12 1/2	Y	Fu 5F430	5	Tim Q100DPH	HF	R	**	–7.80	Tim 26452H	L4IHV	458	840	a	TX		12x3x 1/4	T
7	(c.o.e.)	550 X			32000	9600●	10.00/20D	11.00 24	Wau MZA	6–4 1/4x4 1/4	404	5.6	285	130–3000	7–2 1/2x12 1/2	Y	Fu 5F430	5	Tim S200DPH	2F	R	**	–7.84	Tim 26452H	L4IHV	576	1054	a	FD		14x3x 1/4	T
8	(c.o.e.)	600			28000	10000●	10.00/20D	11.00/24	Wau 140 GK	6–4 1/2x5 1/2	525	6.4	425	172–2600	7–3 1/4x13 3/8	Y	Fu 5A650	5	Tim R100P	HF	R	**	–7.40	Tim 26452TW	L4IA	566	950	a	FD		14x3x 1/4	T
9	(c.o.e.)	601			28000	10900●	10.00/20D	11.00/24	Wau 145 GK	6–5 1/4x6	779	6.2	595	240–2400	7–3 1/2x17 3/4	Y	Spi 7851	4	Tim R100P	HF	R	**	–7.40	Tim 26452TW	L4IA	566	950	a	FD		14x3x 1/4	T
10	(D) (c.o.e.)	602			28000	11200●	10.00/20D	11.00/24	Cum HB600	6–4 1/2x6	672	17.	500	150–1800	7–4 1/2x16 1/2	Y	Spi 7851	4	Tim R100P	HF	R	**	–7.40	Tim 26452TW	L4IA	566	950	a	FD		14x3x 1/4	T
11	Biederman	NSH		130	190	21000	6070	8.25/20D	10.00/20	Her JXLD	6–4x4 1/2	339	6.9	272	131–3200	7–2 1/2x10 H	N	Fu 5A330	5	Tim H700DPH	SF	H	** –7.2		Tim 35000HX	LH4IH	514	744	G	T	60	9x3x 1/4	C
12		NSD		130	190	21000	6070	8.25/20D	10.00/20	Her JXLD	6–4x4 1/2	339	6.9	272	131–3200	7–2 1/2x10 H	N	Fu 5A330	5	Tim H700DPH	2D	H	6.13–8.15		Tim 35000HX	LH4IH	514	744	G	T	60	9x3x 1/4	C
13	Chevrolet	FP	835	116		4600	▼2590	6.00/16S	15S	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.5	174	90–3300	4– ♦ ♦	N	Own	3	Own	Hy 1/4	T	** –4.11		Own	O4IH	164	242	Co	2I	39	5 1/4x2 1/4x	C
14		FR	945	125		♦5800	▼2355	15S	7.00/17S	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.5	174	90–3300	1– ♦ ♦	N	Own	3	Own	HyF	H	** –4.57		Own	O4IH	183	272	Co	2I	48 1/4	5 1/4x2 1/4x	C
15	† Fwd. Control	FT	1033	125		♦7000	2675	15S	7.00/17S	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.5	172	90–3300	4– ♦ ♦	N	Own	3	Own	HyF	H	** –5.14		Own	O4IH	202	302	Co	2I		5 1/4x2 1/4x	C
16		FS	1025	137		8800	▼3170	7.00/17S	7.00/18	O-Thrift Mas.	6–3 1/2x3 1/4	216	6.5	174	90–330	4– ♦ ♦	N	Own	4	Own	HyF	H	** –5.14		Own	O4IH	248	371	Co	2I	60	7x2 3/4x 3/8	C
17	† Fwd. Control	FU	1125	137		10000	2880	7.00/17S	7.00/18	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.5	172	90–3300	4– ♦ ♦	N	Own	4	Own	HyF	H	** –5.14		Own	O4IH	248	371	Co	2I		7x2 3/4x 3/8	C
18		RJ	1100	137		12500	▼3 ,20	7.00/20S	7.50/20	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.5	174	90–3300	4– ♦ ♦	N	Own	4	Own	HyF	H	6.17		Own	O4IH	330	478	Co	2I		7x2 3/4x 3/8	C
19		RK	1135	161		12500	▼3740	7.00/20S	7.50/20	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.5	174	90–3300	4– ♦ ♦	N	Own	4	Own	HyF	H	6.17		Own	O4IH	330	478	Co	2I	60	7x2 3/4x 3/8	C
20	(School bus)	RL	1280	161		12000	▼4120	6.50/20D	7.00/20	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.5	174	90–3300	4– ♦ ♦	N	Own	4	Own	HyF	H	6.17		Own	O4IH	330	478	Co	2I	84	8 1/4x2 1/2x 1/4	C
21		RVS	1470	137		15000	▼4230	7.50/20D	9.00/20♠♦	O-Load Mas.	6–3 1/2x3 1/2	235	6.6	192	93–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17		Own	O4IH	330	478	Co	2I		8 1/4x2 1/2x 1/4	C
22		RWS	1505	161		15000	▼4290	7.50/20D	9.00/20♠♦	O-Load Mas.	6–3 1/2x3 1/2	235	6.6	192	93–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17		Own	O4IH	330	478	Co	2I	60	8 1/4x2 1/2x 1/4	C
23	(c.o.e.)	RPS	●1825	110		15000	▼4755	7.50/20D	9.00/20♠♦	O-Load Mas.	6–3 1/2x3 1/2	235	6.6	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	–6.17		Own	O4IH	330	478	Co	2I	84	8 1/4x2 1/2x 1/4	C
24	(c.o.e.)	RRS	●1860	134		15000	▼4805	7.50/20D	9.00/20♠♦	O-Load Mas.	6–3 1/2x3 1/2	235	6.6	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	–6.17		Own	O4IH	330	478	Co	2I	C01 1/2	8 1/4x2 1/2x 1/4	C
25	(c.o.e.)	RSS	●1895	158		15000	▼4900	7.50/20D	9.00/20♠♦	O-Load Mas.	6–3 1/2x3 1/2	235	6.6	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	–6.17		Own	O4IH	330	478	Co	2I	84 1/2	8 1/4x2 1/2x 1/4	C
26	(c.o.e.)	RP	●1825	110		16000	▼4755	7.50/20D	9.00/20♠♦	O-Load Mas.	6–3 1/2x3 1/2	235	6.6	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17		Own	O4IH	330	478	Co	2I	108 1/2	8 1/4x2 1/2x 1/4	C
27	(c.o.e.)	RR	●1860	134		16000	▼4805	7.50/20D	9.00/20♠♦	O-Load Mas.	6–3 1/2x3 1/2	235	6.6	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17		Own	O4IH	330	478	Co	2I	C01 1/2	8 1/4x2 1/2x 1/4	C
28	(c.o.e.)	RS	●1895	158		16000	▼4900	7.50/20D	9.00/20♠♦	O-Load Mas.	6–3 1/2x3 1/2	235	6.6	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17		Own	O4IH	330	478	Co	2I	84 1/2	8 1/4x2 1/2x 1/4	C
29		RV	1470	137		16000	▼4230	7.50/20D	9.00/20♠♦	O-Load Mas.	6–3 1/2x3 1/2	235	6.6	192	93–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17		Own	O4IH	330	478	Co	2I	108 1/2	8 1/4x2 1/2x 1/4	C
30		RW	1505	161		16000	▼4290	7.50/20D	9.00/20♠♦	O-Load Mas.	6–3 1/2x3 1/2	235	6.6	192	93–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17		Own	O4IH	330	478	Co	2I	60	8 1/4x2 1/2x 1/4	C
31	(School bus)	RX	1550	199		15000	▼4715	7.50/20D	8.25/20	O-Load Mas.	6–3 1/2x3 1/2	235	6.6	192	93–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	6.17		Own	O4IH	330	478	Co	2I	84	8 1/4x2 1/2x 1/4	C
32	Corbitt●	18BG		181		18000		9.00/20	10.00/20	Con M6330	6–4x4 3/4	330	6.1	246	104–2800	7–2 5/16x12	Y	Cla 205V	5	Tim H100DPH		H	**–5.29		Tim 32502H	B4IHV			a	TX		8x3 1/4x 1/4	T
33		22BG		190		22000		10.00/20	10.00/22	Con B6371	6–4 1/2x4 5/8	371	6.0	280	100–2600	7–2 5/8x13 1/2	Y	Fu 5A43	5	Tim L100DPH		H	**–5.29		Tim 35000H	B4IHV			a	TX		8x3 1/4x 1/4	T
34		25BG		200		25000		10.00/22	11.00/22	Con B6427	6–4 1/4x4 1/2	427	5.9	325	127–2600	7–2 5/8x13 1/2	Y	Fu 5A43	5	Tim Q100P		H	**–6.17		Tim 35100TW	W84IA			a	TX		8 1/4x3 1/4x 1/4	T
35	(T)	18TG		137		18000		9.00/20	10.00/20	Con M6330	6–4 1/4x4 1/2	330	6.1	246	104–2800	7–2 5/16x12	Y	Cla 205V	5	Tim H100P‡‡		H	**–5.29		Tim 32505TW	W84IA			a	TX		7 1/4x3 1/4x 1/4	T
36	(T)	H18TG		137		20000		10.00/20		Con M6330	6–4x4 1/2	330	6.1	246	104–2800	7–2 5/16x12	Y	Cla 205V	5	Tim L100P‡‡		H	**–5.29		Tim 32505TW	W84IA			a	TX		7 1/4x3 1/4x 1/4	T
37	(T)	22TG		144		22000		10.00/20	10.00/22	Con B6427	6–4 1/4x4 1/2	427	5.9	325	127–2600	7–2 5/8x13 1/2	Y	Fu 5A43	5	Tim L100P‡‡		H	**–5.29		Tim 35000TW	W84IA			a	TX		8x3 1/4x 1/4	T
38	(T)	H22TG		144		24000		10.00/22		Con B6427	6–4 1/4x4 1/2	427	5.9	325	127–2600	7–2 1/4x13 1/2	Y	Fu 5A43	5	Tim Q100P‡‡		H	**–5.29		Tim 35100TW	W84IA			a	TX		8x3 1/4x 1/4	T
39	(T)	25TG		148		25000		10.00/22	11.00/22	Con R6513	6–4 1/2x5 3/8	513	5.9	400	170–2600	7–3 1/4x—	Y	Spi 6253	5	Tim Q100P‡‡		H	**–6.17		Tim 35100TW	W84IA			a	2		8 1/4x3 1/4x 1/4	T
40	(T)	H25TG		148		25000		10.00/22		Con R6513	6–4 1/2x5 3/8	513	5.9	400	170–2600	7–3 1/4x—	Y	Spi 6253	5	Tim R100P‡‡		H	**–6.17		Tim 35100TW	W84IA			a	2		8 1/4x3 1/4x 1/4	T
41	(T)	28TG		147		28000		10.00/22	11.00/24	Con R6602	6–4 3/4x5 1/2	602	5.9	484	199–2600	7–3 1/4x—	Y	Fu 5A650	5	Tim 8200P‡‡		H	**–6.42		Tim 26470TW	W84IA			a	2D		8 1/4x3 1/4x 1/4	T
42	(D) (T)	22TD		144		22000		10.00/20	10.00/22	Her DWXD	6–4 1/4x4 3/4	404	15	320	135–2600		Y	Fu 5A430	5	Tim L300P		H	6.32–8.20		Tim 35000TW	W84IA			a	TX		8x3 1/4x 1/4	T
43	(D) (T)	H22TD		144		22000		10.00/22		Her DWXD	6–4 1/4x4 3/4	404	15	320	135–2600		Y	Fu 5A430	5	Tim Q300P		H	6.53–8.53		Tim 35100TW	W84IA			a	TX		8x3 1/4x 1/4	T
44	(D) (T)	25TD		148		25000		11.00/20	11.00/22	Her DRXC	6–4 1/2x5 1/4	529	14	400	148–2200	7–3 1/2x13 3/4	Y	Spi 6253	5	Tim Q300P		H	6.53–8.53		Tim 35000TW	W84IA			a	2		8 1/4x3 1/4x 1/4	T
45	(D) (T)	H25TD		148		25000		10.00/22		Her DRXC	6–4 1/2x5 1/4	529	14	400	148–2200	7–3 1/2x13 3/4	Y	Spi 6253	5	Tim R300P		H	6.53–8.53		Tim 35000TW	W84IA			a	2		8 1/4x3 1/4x 1/4	T
46	(D) (T)	27TD		152		27000		10.00/22	11.00/24	Cum HB600	6–4 1/2x6	672	17	500	150–1800	7–4 1/2x16 1/2	Y	Fu 5A920	5	Tim R300P		H	4.92–6.42		Tim 26450W	W84IA			a	2		8 1/4x3 1/4x 1/4	T
47	(D) (T)	H27TD		152		27000		10.00/22		Cum HB600	6–4 1/2x6	672	17	500	150–1800	7–4 1/2x16 1/2	Y	Fu 5A920	5	Tim 8200P‡‡		H	**–6.42		Tim 26450W	W84IA			a	2		8 1/4x3 1/4x 1/4	T
48	(D) (T)	28TD		152		28000		10.00/22	11.00/24	Cum NHB600	6–5 1/2x6	743	15	575	200–2100	7–4 1/2x16 1/2	Y	Fu 5A920	5	Tim 8200P‡‡		H	6.42		Tim 26450W	W84IA			a	2D		8 1/4x3 1/4x 1/4	T
49	(T)	26TG		148		26000		10.00/22	11.00/22	Con R6602	6–4 3/4x5 1/2	602	5.9	484	199–2600	7–3 1/4x—	Y	Fu 5A65	5	Tim R100P‡‡		H	** –5.29		Tim 35100TW	W84IA			a	2		8 1/2x3 1/4x	T
50	Crosley	B		80		1223°°		4.50/12		Own	4–2 1/2x2 3/4	44	7.8	33	26–5400	5–‡		WG-ASI-T92	3	Spi	2F		** –5.17		Own	Own M	64	72	C	2			C
51	Dodge	B-1-B		108	108	4850		6.00/16-S	6.50/16-S	Own T-142	6–3 1/4x4 3/8	217	6.6	172	95–3600	4–2 1/2x4.8	N	NP-88670	3	Own T-142	H 1/2	H	4.1–4.7		Own T-142	O4IH	174	264	Co	TX	40	5/8 x2 1/4 x6 5/8	C
52		B-1-C		116	116	5500		TA-15-S	TA-15-S	Own T-144	6–3 1/4x4 3/8	217	6.6	172	95–3600	4–2 1/2x4.8	N	NP-88670	3	Own T-144	H 1/2	H	4.1–4.7		Own T-144	O4IH	184	276	Co	TX	48	5/8 x2 1/4 x6 5/8	C
53		B-1-D		116	126	7500		6.00/16S^	6.00/20	Own T-146	6–3 1/4x4 1/2	236	6.7	192	102–3600	4–2 1/2x4.8	N	NP-30980	3	Own T-146	HyF	H	3.9–4.8		Own T-146	O4IH	212	316	Co	TX	48	5/8 x2 1/4 x6 1/2	C
54		B-1-FL		128	152	9500		6.00/20S‡	6.50/20	Own T-148	6–3 1/4x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.054	N	NP-39760	4	Own T-148	HyF	H	5.6–6.8		Own T-148	O4IH	336	479	Ce	TX	60	21x2 3/4x7	C
55		B-1-F		128	192	14500		6.00/20S‡	7.50/20	Own T-148	6–3 1/4x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.054	N	NP-39760	4	Own T-148	HyF	H	5.6–6.8		Own T-148	O4IH	336	479	Ce	TX	60	21x2 3/4x7	C
56		B-1-FA		128	192	14500		6.50/20–D	8.25/20	Own T-148	6–3 1/4x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.054	N	NP-39760	4	Eat A5-1350	SFd	H	5.8–8.1		Own T-148	O4IH	336	479	Ce	TX	60	21x2 3/4x7	C
57		B-1-H		128	192	15500		7.00/20♠	8.25/20	Own TX-148	6–3 1/4x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.054	Y	NP-39760	4	Own TX-148	HyF	H	5.6–6.8		Own TX-148	O4IHV	336	479	Ce	TX	60	21x2 3/4x7	C
58		B-1-HA		128	192	15500		7.00/20♠	8.25/20	Own TX-148	6–3 1/4x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.054	Y	NP-39760	4	Eat A5-1350	SFd	H	5.8–8.1		Own TX-148	O4IHV	336	479	Ce	TX	60	21x2 3/4x7	C
59		B-1-FM		107	161	14750		6.00/20‡S	7.50/20	Own T-152	6–3 1/4x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.054	N	NP-88070	4	Own T-152	HyF	H	5.6–6.8		Own T-152	O4IH	336	479	Ce	TX	60	21x2 3/4x7	C
60	(c.o.e.)	B-1-FMA		107	161	14750		6.50/20–D	8.25/20	Own T-152	6–3 1/4x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.054	N	NP-88070	4	Eat A5-1350	SFd	H	5.8–8.1		Own T-152	O4IH	336	479	Ce	TX	60	21x2 3/4x7	C
61	(c.o.e.)	B-1-HM		107	161	15750		7.00/20♠	8.25/20	Own TX-152	6–3 1/4x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.054	Y	NP-88070	4	Own TX-152	HyF	H	5.6–6.8		Own TX-152	O4IHV	336	479	Ce	TX	60	21x2 3/4x7	C
62	(c.o.e.)	B-1-HMA		107	161	15750		7.00/20♠	8.25/20	Own TX-152	6–3 1/4x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.054	Y	NP-88070	4	Eat A5-1350	SFd	H	5.8–8.1		Own TX-152	O4IHV	336	479	Ce	TX	60	21x2 3/4x7	C
63		B-1-JL		128	212	16500		6.00/20	8.25/20	Own T-150	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88400	5	Own T-150	HyF	H	6.2–7.1		Own T-150	O4IHV	396	553	c	TX	60	9 1/2x2 1/4x7	C
64		B-1-JAL		128	212	16500		6.00/20	8.25/20	Own T-150	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88400	5	Eat A5-1350	SFd	H	5.8–8.1		Own T-150	O4IHV	396	553	c	TX	60	9 1/2x2 1/4x8 1/2	C
65		B-1-KAL		128	212	17000		7.50/20♠	9.00/20°	Own TX-150	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88400	5	Eat 6500	SFd	H	6.1–8.5		Own TX-150	O4IHV	396	553	c	TX	60	9 1/2x2 1/4x8 1/2	C
66	(c.o.e.)	B-1-JML		107	161	16750		6.00/20	8.25/20	Own T-154	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88410	5	Own T-154	HyF	H	6.2–7.1		Own T-154	O4IHV	396	553	c	TX	60	9 1/2x2 1/4x8 1/2	C
67	(c.o.e.)	B-1-JMAL		107	161	16750		6.00/20	8.25/20	Own T-154	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88410	5	Eat A5-1350	SFd	H	5.8–8.1		Own T-154	O4IHV	396	553	c	TX	60	9 1/2x2 1/4x8 1/2	C
68	(c.o.e.)	B-1-KMAL		107	161	17250		7.50/20♠	9.00/20°	Own TX-154	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88410	5	Eat 6500	SFd	H	6.1–8.5		Own TX-154	O4IHV	396	553	c	TX	60	9 1/2x2 1/4x8 1/2	C
69		B-1-J		128	212	16500		6.50/20D	8.25/20	Own T-150	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88400	5	Own T-150	HyF	H	6.2–7.1		Own T-150	O4IHV	396	553	c	TX	60	9 1/2x2 1/4x8 1/2	C
70		B-1-JA		128	212	16500		6.50/20D	8.25/20	Own T-150	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88400	5	Eat A5-1350	SFd	H	5.8–8.1		Own T-150	O4IHV	396	553	c	TX	60	9 1/2x2 1/4x8 1/2	C
71		B-1-KA		128	212	17000		7.50/20♠	9.00/20°	Own TX-150	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88400	5	Eat 6500	SFd	H	6.1–8.5		Own TX-150	O4IHV	396	553	c	TX	60	9 1/2x2 1/4x8 1/2	C
72		B-1-JM		107	161	16750		6.50/20D	8.25/20	Own T-154	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88410	5	Own T-154	HyF	H	6.2–7.1		Own T-154	O4IHV	396	553	c	TX	60	9 1/2x2 1/4x8 1/2	C
73		B-1-JMA		107	161	16750		6.50/20D	8.25/20	Own T-154	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88410	5	Eat A5-1350	SFd	H	5.8–8.1		Own T-154	O4IHV	396	553	c	TX	60	9 1/2x2 1/4x8 1/2	C
74		B-1-KMA		107	161	17250		7.50/20♠	9.00/20°	Own TX-154	6–3 1/4x4 1/2	250	6.6	204	114–3600	4–2 1/2x5.054	Y	NP-88410	5	Eat 16500 lb.	SFd	H	6.1–8.5		Own TX-154	O4IHV	396	553	c	TX	60	9 1/2x2 1/4x8 1/2	C

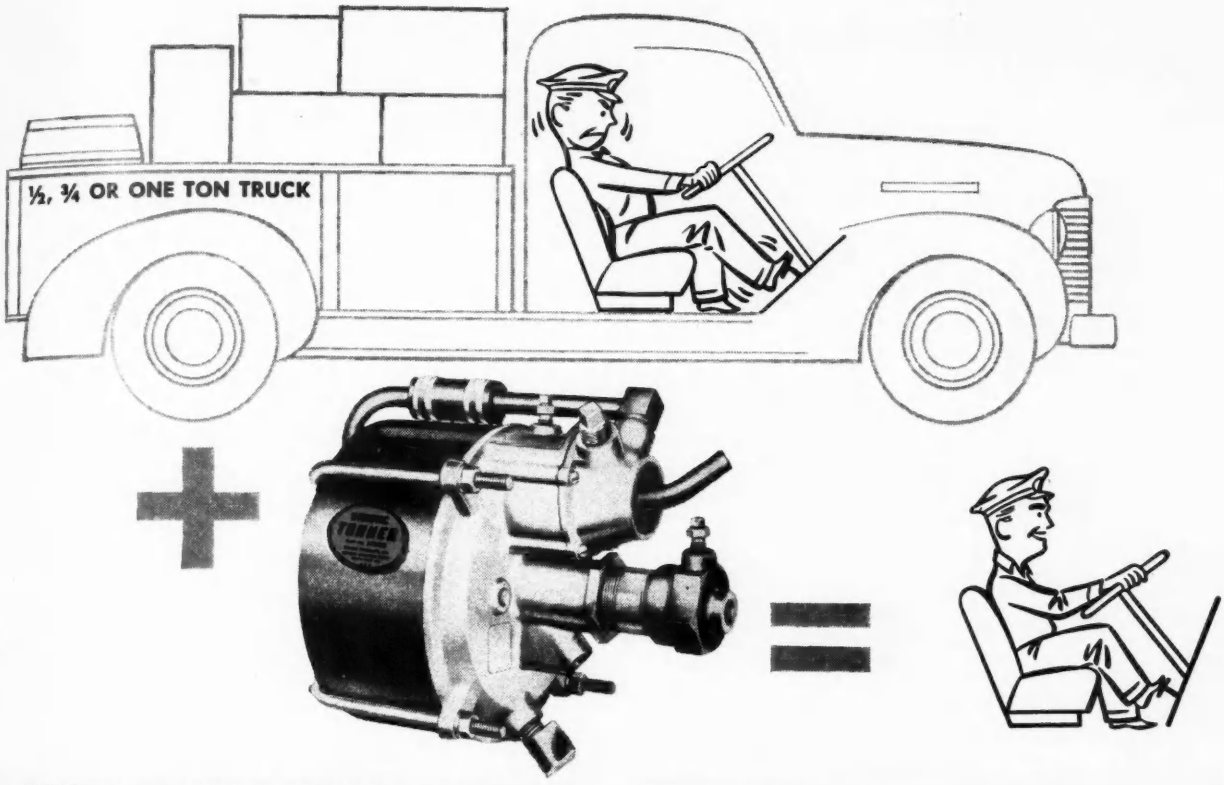
♦—8.25/20 front tires are required when 8.00/20 dual rears are used.
°° —Pick-up body; panel delivery 1265.
°°—Rear only; front 5.83/20.

●—Chevrolet own rear axle (5.43:1) available on Models RJ-RK-RL. Chevrolet own 2-speed rear axle (6.12-8.16) available on all models with suffix RWA-RWB-RWC-RWD-RWE-RWF-RWG-RWH-RWJ-RWK-RWL.

‡‡—Two speed axles available.
♦—7.50/17 tire is optional for Rear or Front and Rear, with no increase in GVW.
L—Parking brake on rear wheels.

†—Forward control Chassis for Door-to-Door delivery bodies.
‡—Front only; Rear 8.25/20.
‡—Front only; Rear 6.50/20.

♦♦—Diameter: (Average) Front, 2.6858; Rear Center, 2.7161; Rear Center, 2.7788; Total length, 5⅛.
*—Includes cab.



BENDIX "TONNER" HYDROVAC
POWER BRAKE
GIVES LIGHT TRUCKS EASIER, SAFER BRAKING!

Here's the answer that really pays off for you and your drivers. If they've been wrestling with the brake of an overloaded light truck, you can change their scowls to smiles by installing a Bendix "Tonner" Hydrovac* Power Brake. It only takes ninety minutes to equip ½, ¾ or one ton trucks with the "Tonner", and it will give years of easier, safer braking. The "Tonner" is another unique Bendix product that is designed to help you cut operating costs by giving you greater brake lining mileage. See your distributor for further details. *REG. U.S. PAT. OFF.

BENDIX PRODUCTS DIVISION of Bendix AVIATION CORPORATION
SOUTH BEND 20, INDIANA

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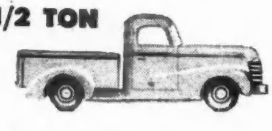
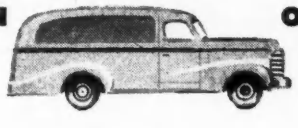
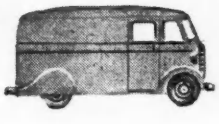
FOR 1/2 TON  3/4 TON  ONE TON  TRUCKS

(Continued from Page 110)

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Sp'ds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
	Dodge Cont'd																														
1	B-1-R		130	229	18500		7.50/20D	9.00/20	Own T-156	6–3¾x4¼	281	6.4	225	115–3200	7–3x11.2	Y	NP-88220	5	TimH100DPH	HyF	H	6.8–7.2	Own T-156	O4IHV	396	609c	TX	60		⅞x2⅜x9⅜	C
2	B-1-RA		130	229	18500		7.50/20D	9.00/20	Own T-156	6–3¾x4¼	281	6.4	225	115–3200	7–3x11.2	Y	NP-88220	5	Tim H-300	HFd	H	6.1–8.8	Own T-156	O4IHV	396	609c	TX	60		⅞x2⅜x9⅜	C
3	B-1-T		130	190	21000		7.50/20▲	10.00/20	Own T-158	6–3¾x5	331	6.5	270	128–3000	7–3x11.2	Y	NP-88450	5	Tim L-100	HyF	H	6.8–7.4	Tim 32516A1	O4IHV	424	666c	TX	60		¼x3x10	C
4	B-1-TA		130	190	21000		7.50/20▲	10.00/20	Own T-158	6–3¾x5	331	6.5	270	128–3000	7–3x11.2	Y	NP-88450	5	Tim L-300	HFd	H	6.3–9.1	Tim 32516A1	O4IHV	424	666c	TX	60		¼x3x10	C
5	B-1-V *		130	190	23000		9.00/20†	11.00/20	Own T-158	6–3¾x5	331	6.5	270	128–3000	7–3x11.2	Y	NP-88450	5	Tim Q-100	HyF	H	6.8–7.8	Tim 35020-NX9	O4IHV	485	770c	TX	60		¼x3x10	C
6	B-1-VA		130	190	23000		9.00/20†	11.00/20	Own T-158	6–3¾x5	331	6.5	270	128–3000	7–3x11.2	Y	NP-88450	5	Tim Q-300	HFd	H	6.5–9.5	Tim 35020-NX9	O4IHV	485	770c	TX	60		¼x3x10	C
7	Route Van-B1DU		102	117	7900		7.00/16	8.25/16S	Own T-164	6–3¼x4½	230	6.7	184	102–3600	4–2½x4.8	N	NP-88490	3	Own T-164	HyF	H	4.89	Own T-164	O4IH	212	316c	TX	No		⅞x2⅜x6⅜	C
8	Route Van-B1EU		102	142	10100		7.50/16††	9.00/16S	Own T-165	6–3¾x4½	230	6.7	184	102–3600	4–2½x4.8	N	NP-88500	4	Own T-165	HyF	H	5.83	Own T-165	O4IH	240	355c	TX	No		⅞x2⅜x6⅜	C
	School Buses																														
9	B-1-FS-152		152	192	15000		6.50/20D	7.00/20	Own T-148	6–3⅞x4½	236	6.6	192	109–3600	4–2½x5.054	N	NP-39760	4	Own T-148	HyF	H	5.6–6.8	Own T-148	O4IH	336	479	Ce	TX	.....	21x2¾x7	C
10	B-1-JS-212		212	212	17000		7.50/20D	8.25/20	Own T-150	6–3⅞x4½	250	6.6	204	114–3600	4–2½x5.054	Y	NP-88400	5	Own T-150	HyF	H	6.2–7.1	Own T-150	O4IHV	396	553c	TX	.....		⅞x2⅞x8⅜	C
11	B-1-RS-229		229	229	19000		8.25/20D	9.00/20	Own T-156	6–3¾x4¼	281	6.4	225	115–3200	7–3x11.2	Y	NP-88220	5	TimH100DPH	HyF	H	6.8–8.1	Own T-156	O4IHV	396	609c	TX	.....		⅞x2⅜x9⅜	C
12	Duplex T		136	220	18000	6600	8.25/20D	9.00/20	Her JXD	6–4x4¼	320	6.2	240	113–3000	7–2¼x10⅜	Y	Fu 5B330	5	Tim H100	B	H	** –7.20	Tim 32502	L4IHV	420	654	A	TX	57¾	9 1/16x3½x⅞	C
13	TH-404		136	220	18000	6900	8.25/20D	9.00/20	Her WXLC3	6–4¼x4¾	404	5.8	312	139–2600	7–2⅝x13¾	Y	FU-5A430	5	Tim H-300	DF	H	6.13–8.15	Tim 32502	L41HV	420	654	A	TX	49¼	9½x3½x⅞	C
14	R		136	220	25000	8820	9.00/20D	10.00/20	Her WXLC-3	6–4¼x4¾	404	5.8	312	139–2600	7–2⅝x13¾	Y	Fu 5A43	5	Tim Q300	DF	R	6.53–8.53	Tim 35100	L4IHV	730	1016	A	TX	49¼	9½x3½x⅞	C
15	JHA		148	220	28000	9800	10.00/20D	11.00/20	Her RXB	6–4½x5¼	501	5.4	360	137–2400	7–3x13¼	Y	Fu 5A620	5	Tim S200	2F	R	** –9.83	Tim 26450	Ws4IA	912	1311	A	TX	61¼	10½x3x1⅛	C
16	JH-558		148	220	28000	9800	10.00/20D	11.00/20	Her RXLD	6–4¼x5¼	558	6.3	430	154–2400	7–3½x13¼	Y	FU-5A650	5	Tim S-300	DF	R	6.53–8.53	Tim 26450	Ws4IA	912	1311	A	TX	60¾	10½x3⅛x⅞	C
17	KHA		148	220	32000	10500	11.00/20D	11.00/20	Her RXC	6–4½x5¼	529	5.4	395	132–2300	7–3x13¼	Y	Fu 5A625	5	Tim U-200	2F	R	** –9.83	Tim 26450	Ws4IA	912	1311	A	TX	60¾	10½x3⅛x⅞	C
18	L		148	220	37000	11300	11.00/20D	11.00/20	Her RXLD	6–4¼x5¼	558	5.4	430	154–2400	7–3½x13¼	Y	Fu 5C650	5	Tim U-200	2F	R	** –9.83	Tim 26450	Ws4IA	912	1311	A	TX	60¾	10½x3⅛x⅞	C
19	Federal 16M		139	194	15000	4460	7.50/20D	7.50/20	Her JXEF	6–3½x4¼	245	...	184	90–3100	7–2¼x10‡‡	N	WG T9	4	T 53547DPH	BF	H	** –5.66	Tim 30000HX	L4IHV	310	482a	TX	60		8x2¾x¼	T
20	16M2		139	194	15000	4590	7.50/20D	8.25/20D	Her JXEF	6–3½x4¼	245	...	184	90–3100	7–2½x10‡‡	N	WG T9	4	TimE300DPH	dF	H	6.13–8.10	Tim 30000HX	L41HV	310	482a	TX	60		8x2¾x¼	T
21	18M		139	194	17000	4700	8.25/20D	8.25/20	Her JXBF	6–3¾x4¼	263	...	190	96–3000	7–2½x10‡‡	N	WG T9	4	Tim E100DPH	SF	H	** –6.20	Tim 30003H	LT41HV	314	532a	TX	60		8x2¾x¼	T
22	18M2		139	194	17000	4830	8.25/20D	8.25/20	Her JXBF	6–3¾x4¼	263	...	190	96–3000	7–2½x10‡‡	N	WG T9	8	TimE300DPH	dF	H	6.13–8.10	Tim 30003H	LT41HV	314	532a	TX	60		8x2¾x¼	T
23	25M		139	194	19000	4950	8.25/20D	9.00/20	Her JXCF	6–3¾x4¼	282	...	212	102–3000	7–2½x10▲	N	Cla 205VO	5	TimH100DPH	SF	H	** –6.80	Tim 3100H	LT41HV	346	583a	TX	60		8x2¾x¼	T
24	25M2		139	194	19000	5100	8.25/20D	9.00/20	Her JXCF	6–3¾x4¼	282	...	212	102–3000	7–2½x10▲	N	Cla 205VO	5	TimH300DPH	dF	H	6.13–8.15	Tim 3100H	LT41HV	346	583a	TX	60		8x2¾x¼	T
25	29M		139	194	21500	5500	9.00/20D	10.00/20	Her JXDF	6–4x4¼	320	...	250	112–2800	7–2½x10‡‡	Y	Cla 205V	5	Tim L100DPH	SF	H	** –6.83	Tim 32514H	LT41HV	466	820a	TX	60		8x2¾x¼	T
26	29M2		139	194	21500	5690	9.00/20D	10.00/20	Her JXDF	6–4x4¼	320	...	250	112–2800	7–2½x10‡‡	Y	Cla 205V	10	Tim L300DPH	dF	H	6.32–8.22	Tim 32514H	LT41HV	466	820a	TX	60		8x2¾x¼	T
27	29MA		155	194	21500	5950	9.00/20D	10.00/20	Her JXDF	6–4x4¼	320	...	250	112–2800	7–2½x10‡‡	Y	Cla 205V♦	5	Tim L100DPH	SF	H	** –6.83	Tim 32514H	LT41HV	466	820a	TD	76		8x2¾x¼	T
28	29ML		139	194	21500	5535	9.00/20D	10.00/20	Here JXLDF	6–4x4½	339	...	272	126–2800	7–2½x10‡‡	Y	Cla 205V	5	Tim L100DPH	SF	H	** –6.83	Tim 32514H	LT41HV	466	820a	TX	60		8x2¾x¼	†T
29	29ML2		139	194	21500	5725	9.00/20D	10.00/20	Here JXLDF	6–4x4½	339	...	272	126–2800	7–2½x10‡‡	Y	Cla 205V	10	Tim L300DPH	dF	H	6.32–8.22	Tim 32514H	LT41HV	466	820a	TX	60		8x2¾x¼	†T
30	29MLA		155	194	21500	5985	9.00/20D	10.00/20	Here JXLDF	6–4x4½	339	...	272	126–2800	7–2½x10‡‡	Y	Cla 205V	15	Tim L100DPH	SF	H	** –6.83	Tim 32514H	LT41HV	466	820a	TD	76		8x2¾x¼	†T
31	35M		143	203	22500	6925	9.00/20D	10.00/20	Con T6371F	6–4½x4½	371	...	290	133–2600	7–2⅞x13½	Y	Cla 270VO	5	Tim L100DPH	SF	R	**–6.83	Tim 32514H	LT41HV	466	820a	TX	60½	10½x3½x⅞	•T
32	35M2		143	203	22500	7115	9.00/20D	10.00/20	Con T6371F	6–4½x4½	371	...	290	133–2600	7–2⅞x13½	Y	Cla 270VO	10	Tim L300DPH	dF	R	6.32–8.22	Tim 32514H	LT41HV	466	820a	TX	60½	10½x3½x⅞	•T
33	45M		143	203	26000	8005	10.00/22D	10.00/24	Con T6427F	6–4¾x4¼	427	...	342	155–2600	7–2¾x13½	Y	Cla 270VO	5	Tim Q100P	SF	R	** –6.83	Tim 35011TW	TW4IA	606	933a	TD	60½	10½x3½x⅞	•T
34	45M2		143	203	26000	8380	10.00/22D	10.00/24	Con T6427F	6–4¾x4¼	427	...	342	155–2600	7–2¾x13½	Y	Cla 270VO	10	Tim Q300P	dF	R	6.53–8.53	Tim 35011TW	TW4IA	606	933a	TD	60½	10½x3½x⅞	•T
35	55M		143	203	30000	8635	11.00/22D	11.00/24	Con T6427F	6–4¾x4¼	427	...	342	155–2600	7–2¾x13½	Y	Cla 270VO	10	Tim S300P	HyF	R	6.53–8.53	Tim 36021TW	Tw4IA	722	1051a	TD	60½	10½x3½x⅞	•T
36	55MA		155	203	30000	8765	11.00/22D	11.00/24	Con T6427F	6–4¾x4¼	427	...	342	155–2600	7–2¾x13½	Y	Cla 270V♦	15	Tim S-200P	2F	R	** –7.08	Tim 36021TW	TW4IA	722	1051a	TD	72½	10½x3½x⅞	•T
37	60MA		155	203	32000	9600	11.00/22D	11.00/24	Con 22RF	6–4½x5¼	501	...	384	148–2400	7–2¾x14½	Y	Fu 5A655‖	15	Tim S200P	2F	R	** –7.08	Tim 36021TW	Tw4IA	722	1051a	FX	72½	10½x3½x⅞	•T
38	60M2		143	203	32000	9370	11.00/22D	11.00/24	Con 22RF	6–4½x5¼	501	...	384	148–2400	7–2¾x14½	Y	Fu 5A650	10	Tim S300P	HyF	R	6.53–8.53	Tim 36021TW	Tw4IA	722	1051a	TX	60½	10½x3½x⅞	T
39	65M2		141	201	33000	9995	11.00/22D	11.00/24	Con R6602F	6–4⅞x5⅝	602	...	464	200–2600	7–3¼x14½	Y	Fu 5A650	10	Tim S300P	HyF	R	6.53–8.53	Tim 36000TW	Ws4IA	722	1051a	TX	60½	10½x3½x⅞	T
40	65MA		153	201	33000	10225	11.00/22D	11.00/24	Con R6602F	6–4⅞x5⅝	602	...	464	200–2600	7–3¼x14½	Y	Fu 5A65‡	15	Tim S200P	HyF	R	** –7.08	Tim 36000TW	Ws4IA	722	1051a	TX	72½	10½x3½x⅞	•T
	Ford F-1																														
41	Cowl...8HC-84	930	114	114	4700	2221	6.00/16-4	6.50/16-6S	Own 7HC	6–3.3x4.4	226	6.8	180	95–3300	4–2.87x4.8	N	Own 21C	3	Own 8C	H½	H	3.73–4.27	Own 8RC	O4IH	178	259	Co	M2	40.06	5.92x2½x15	T
42	Cowl...8RC-84	960	114	114	4700	2264	6.00/16-4	6.50/16-6S	Own 8RC	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Own 21C	3	Own 8C	H½	H	3.73–4.27	Own 8RC	O4IH	178	259	Co	M2	40.06	5.92x2½x15	T
	F-2																														
43	Cowl...8HD-84	1045	122	122	5700	2637	6.50/16-6	7.00/16-6S	Own 7HD	6–3.3x4.4	226	6.8	180	95–3300	4–2.87x4.8	N	Own 51Y	4	Own 8RD	SF	H	** –4.86	Own 8RD	O4IH	167	264	Co	M2	48.06	6x2¼x.19	T
44	Cowl...8RD-84	1075	122	122	5700	2677	6.50/16-6	7.00/16-6S	Own 8RD	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Own 51Y	4	Own 8RD	SF	H	** –4.86	Own 8RD	O4IH	167	264	Co	M2	48.06	6x2¼x.19	T
	F-3																														
45	Cowl...8HY-84	1120	122	122	6800	2847	7.00/17-6S	7.50/17-8S	Own 7HY	6–3.3x4.4	226	6.8	180	95–3300	4–2.87x4.8	N	Own 51Y	4	Own 8RY	SF	H	** –4.86	Own 8RY	O4IH	188	308	Co	M2	48.06	6x2¼x.19	T
46	Cowl...8RY-84	1150	122	122	6800	2887	7.00/17-6S	7.50/17-8S	Own 8RY	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Own 51Y	4	Own 8RY	SF	H	** –4.86	Own 8RY	O4IH	188	308	Co	M2	48.06	6x2¼x.19	T
	F-4																														
47	Cowl...8HTL-84	1175	134	134	10000	3328	7.00/20-8S	7.00/18-8	Own 7HT	6–3.3x4.4	226	6.8	180	95–3300	4–2.87x4.8	N	Own 41T	4	Own 7RTL	SF	H	5.14–5.86	Own 7RTL	O4IH	302	506	Co	TX	60.06	7x2¾x.21	T
48	Cowl...8RTL-84	1205	134	134	10000	3367	7.00/20-8S	7.00/18-8	Own 8RT	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Own 41T	4	Own 7RTL	SF	H	5.14–5.86	Own 7RTL	O4IH	302	506	Co	TX	60.06	7x2¾x.21	T
	F-5																														
49	Cowl...8HT-84	1220	134	134	14000	3758	6.50/20-6	7.50/20-8	Own 7HT	6–3.3x4.4	226	6.8	180	95–3300	4–2.87x4.8	N	Own 41T	4	Own 7RT	SF	H	5.14–6.67	Own 7RT	O4IH	302	506	Co	TX	60.06	7x2¾x.21	L
50	Cowl...8RT-84	1250	134	134	14000	3798	6.50/20-6	7.50/20-8	Own 8RT	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Own 41T	4	Own 7RT	SF	H	5.14–6.67	Own 7RT	O4IH	302	506	Co	TX	60.06	7x2¾x.21	L
51	Cowl...8HST-84	1250	158	158	14000	3848	6.50/20-6	7.50/20-8	Own 7HT	6–3.3x4.4	226	6.8	180	95–3300	4–2.87x4.8	N	Own 41T	4	Own 7RT	SF	H	5.14–6.67	Own 7RT	O4IH	302	506	Co	TX	84.06	7x2¾x.21*	LT
52	Cowl...8RST-84	1280	158	158	14000	3888	6.50/20-6	7.50/20-8	Own 8RT	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Own 41T	4	Own 7RT	SF	H	5.14–6.67	Own 7RT	O4IH	302	506	Co	TX	84.06	7–2¾x.21*	LT
	F-5 C.O.E.																														
53	Cab...8HOW-81	1605	110	110	14000	4123	6.50/20-6	7.50/20-8	Own 7HW	6–3.3x4.4	226	6.8	180	95–3300	4–2.87x4.8	N	Own 41T	4	Own 7RT	SF	H	5.14–6.67	Own 7RW	O4IH	302	506	Co	TX	60.06	7x2¾x.21*	LT
54	Cab...8ROW-81	1635	110	110	14000	4163	6.50/20-6	7.50/20-8	Own 8RW	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Own 41T	4	Own 7RT	SF	H	5.14–6.67	Own 7RW	O4IH	302	506	Co	TX	60.06	7x2¾x.21*	LT
55	Cab...8HW-81	1635	134	134	14000	4283	6.50/20-6	7.50/20-8	Own 7HW	6–3.3x4.4	226	6.8	180	95–3300	4–2.87x4.8	N	Own 41T	4	Own 7RT	SF	H	5.14–6.67	Own 7RW	O4IH	302	506	Co	TX	84.06	7.08x2.8x¼*	LT
56	Cab...8RW-81	1665	134	134	14000	4323	6.50/20-6	7.50/20-8	Own 8RW	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Own 41T	4	Own 7RT	SF	H	5.14–6.67	Own 7RW	O4IH	302	506	Co	TX	84.06	7.08x2.8x¼*	LT
57	Cab...8H8W-81	1665	158	158	14000	4383	6.50/20-6	7.50/20-8	Own 7HW	6–3.3x4.4	226	6.8	180	95–3300	4–2.87x4.8	N	Own 41T	4	Own 7RT	SF	H	5.14–6.67	Own 7RW	O4IH	302	506	Co	TX	108.1	7.08x2.8x¼*	LT
58	Cab...8RSW-81	1695	158	158	14000	4423	6.50/20-6	7.50/20-8	Own 8RW	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Own 41T	4	Own 7RT	SF	H	5.14–6.67	Own 7RW	O4IH	302	506	Co	TX	108.1	7.08x2.8x¼*	LT
	F-5 School Bus																														
59	Bus Cl..8HST-84	1315	158	158	12000	3855	6.50/20-6	7.00/20-8	Own 7HT	6–3.3x4.4	226	6.8	180	95–3300	4–2.87x4.8	N	Own 41T	4	Own 7RT	SF	H	5.14–6.67	Own 7RT	O4IH	302	506	Co	TX	128♦	7x2¾x.21*	LT
60	Bus Cl..8RST-84	1345	158	158	12000	3895	6.50/20-6	7.00/20-8	Own 8RT	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Own 41T	4	Own 7RT	SF	H	5.14–6.67	Own 7RT	O4IH	302	506	Co	TX	128♦	7x2¾x.21*	LT
61	Bus Cl..8H4T-84	1530	194	194	15000	4200	7.50/20-8	8.25/20-10	Own 7HT	6–3.3x4.4	226	6.8	180	95–3300	4–2.87x4.8	N	Own 41T	4	Own 7RT	SF	H	5.14–6.67	Own 7RTH	O4IH	302	506	Co	TX	164♦	7.08x2.8x¼*	LT
62	Bus Cl..8R4T-84	1560	194	194	15000	4300	7.50/20-8	8.25/20-10	Own 8RT	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Own 41T	4	Own 7RT	SF	H	5.14–5.67	Own 7RTH	O4IH	302	506	Co	TX	164♦	7.08x2.8x¼*	LT
	F-6																														
63	Cowl..8HTH-84	1610	134	134	15500	4069	7.50/20-8	8.25/20-10	Own 7HT	6–3.3x4.4	226	6.8	180	95–3300	4–2.87x4.8	N	Own 41T	4	Own 7RTM■	SF	H	5.83–8.11	Own 7RTH	O4IHV	302	506	Co	TX	60.06	7.08x2.8x¼*	LT
64	Cowl..8RTH-84	1640	134	134	15500	4109	7.50/20-8	8.25/20-10	Own 8RT	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Own 41T	4	Own 7RTM■	SF	H	5.83–8.11	Own 7RTH	O4IHV	302	506	Co	TX	60.06	7.08x2.8x¼*	LT
65	Cowl.8H8TH-84	1640	158	158	15500	4169	7.50/20-8	8.25/20-10	Own 7HT	6–3.3x4.4	226	6.8	180	95–3300	4–2.87x4.8	N	Own 41T	4	Own 7RTM■	SF	H	5.82–8.11	Own 7RTH	O4IHV	302	506	Co	TX	84.06	7.08x2.8x¼*	LT
66	Cowl.8R8TH-84	1670	158	158	15500	4209	7.50/20-8	8.25/20-10	Own 8RT	8–3⅛x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Own 41T	4	Own 7RTM■	SF	H	5.83–8.11	Own 7RTH	O4IHV	302	506	Co	TX	84.06	7.08x2.8x¼*	LT
	F-6 C.O.E.																														
67	Cab.8HOWH-81	1990	110	110	16000	4569	7.50/20-8	8.25/20-10	Own 7HW	6–3.3x4.4	226	6.8	180	95–3300	4–2.87x4.8	N	Own 41T	4	Own 7RTM■	SF	H	5.83–8.11	Own 7RW	O4IHV	302	506	Co	TX	60.06	7x2¾x.21*	LT

(Turn to Page 114, please)

† — Front only: Rear 10.00/20.
▲ — Front only: Rear 8.25/20.
‡ — For shorter wheelbases 8⅛x23⅛x⅞.
♦ — Cowl to Axle.
* — For shorter wheelbases—10x31⅛x1¼.
▲ — Auxiliary trans. Spicer 6231B, three forward speeds.
‡ — Auxiliary trans. Spicer 703F, three forward speeds.
■ — Two speed rear axle with vacuum shift.
* — Reinforcement 6.58x2.21x.125, Inside Siderail from Front to Rear Spring Brackets.
†† — Front only: Rear 8.25/16.

Steps enclosed inside the doors! Spine-saving new riding comfort!

Improvement after improvement spotlights the new 1949 Studebaker trucks!

EVERYWHERE you look, you see advancements in these 1949 Studebaker trucks that are new to you—and new to truck designing!

These husky, handsome, new Studebaker pace-setters have a dramatic new kind of styling to begin with! Sweeping streamlines from low front end all the way back!

New colors, too, as well as new contours—"new look" fenders flaired into a low-swung hood—a lower cab—a massive new grille—a rugged two-tone bumper!

There's a new sure-footedness—the steps are enclosed inside the cab! The wide doors have "hold-open" stops!

Cab equipment includes window wings, foot-operated ventilators, automatic cab light, ash tray—two arm rests, windshield wipers, sun visors. Studebaker's exclusive Truck Climatizer heating and defrosting system is available at extra cost.

More truck models than Studebaker ever offered before! An extensive new range of sizes and wheelbases!

It would take pages of this publication to describe everything that's new and different in the revolutionary 1949 Studebaker trucks. Stop in and see them for yourself at a nearby Studebaker dealer's showroom.

STUDEBAKER TRUCKS

NOTED FOR LOW-COST OPERATION

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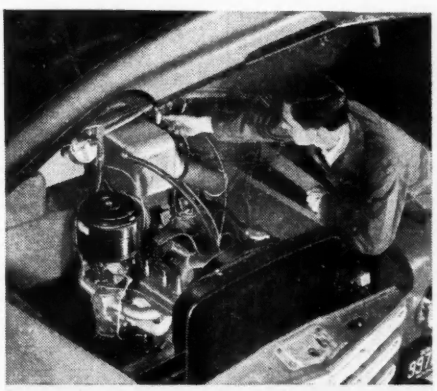

A new kind of lift-the-hood accessibility—No standing on a box to get at the engine and ignition! No fumbling under the dash panel to adjust instrument panel and accessory connections. The close-set fenders and wide-opening hood of the 1949 Studebaker trucks make it easy even for men of small stature to reach everything without strain.

(Continued from Page 112)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number, Diameter and Length	Governor Standard	TRANSMISSION Make and Model	TRANSMISSION Forward Sp'ds	REAR AXLE Make and Model	REAR AXLE Gear and Type	REAR AXLE Drive & Torque	REAR AXLE Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operation	BRAKES SERVICE Lining Area	BRAKES SERVICE Drum Area	BRAKES SERVICE Drum Material	BRAKES Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	FRAME Type
1	**Ford, Continued**																														
2	F-6 C.O.E. Cont'd																														
3	Cab..8ROWH-81	2020	110	110	16000	4609	7.50/20-8	8.25/20-10	Own 8RW	8-3 7/8 x3 3/4	239	6.8	180	100-3800	3-2.49x4.9	N	Own 41T	4	Own 7RTM■	SF	H	5.83-8.11	Own 7RW	O4IHV	302	506	Co	TX	60.06	7x2 1/4 x.21*	LT
4	Cab...8HWH-81	2020	134	134	16000	4728	7.50/20-8	8.25/20-10	Own 7HW	6-3 .3x4.4	226	6.8	180	95-3300	4-2.87x4.8	N	Own 41T	4	Own 7RTM■	SF	H	5.83-8.11	Own 7RW	O4IHV	302	506	Co	TX	84.06	7.08x2.8x 1/4	LT
5	Cab...8RWH-81	2050	134	134	16000	4768	7.50/20-8	8.25/20-10	Own 8RW	8-3 7/8 x3 3/4	239	6.8	180	100-3800	3-2.49x4.9	N	Own 41T	4	Own 7RTM■	SF	H	5.83-8.11	Own 7RW	O4IHV	302	506	Co	TX	84.06	7.08x2.8x 1/4	LT
6	Cab...8HSWH-81	2050	158	158	16000	4828	7.50/20-8	8.25/20-10	Own 7HW	6-3 .3x4.4	226	6.8	180	95-3300	4-2.87x4.8	N	Own 41T	4	Own 7RTM■	SF	H	5.83-8.11	Own 7RW	O4IHV	302	506	Co	TX	108.1	7.08x2.8x 1/4	LT
7	Cab...8RSWH-81	2080	158	158	16000	4868	7.50/20-8	8.25/20-10	Own 8RW	8-3 7/8 x3 3/4	239	6.8	180	100-3800	3-2.49x4.9	N	Own 41T	4	Own 7RTM■	SF	H	5.83-8.11	Own 7RW	O4IHV	302	506	Co	TX	108.1	7.08x2.8x 1/4	LT
8	F-7																														
9	Cowl...8EQ-84	2685	135	135	19000	5388	8.25/20-10	9.00/20-10	Own 8EQ	8-3 1/2 x4 3/4	337	6.4	255	145-3600	3-2.87x5.0	Y	Own 7EQ	5	Own 7EQ	Hy	H	6.8	Own 7EQ	O4IHV	350	583	Co	TX	61.06	9x3x.25	T
10	Cowl...8EQ9-84	2735	159	159	19000	5498	8.25/10-10	9.00/20-10	Own 8EQ	8-3 1/2 x4 3/4	337	6.4	255	145-3600	3-2.87x5.0	Y	Own 7EQ	5	Own 7EQ	Hy	H	6.8	Own 7EQ	O4IHV	350	583	Co	TX	85.06	9x3x.25	T
11	Cowl...8E5Q-84	2785	195	195	19000	5618	8.25/20-10	9.00/20-10	Own 8EQ	8-3 1/2 x4 3/4	337	6.4	255	145-3600	3-2.87x5.0	Y	Own 7EQ	5	Own 7EQ	Hy	H	6.8	Own 7EQ	O4IHV	350	583	Co	TX	121.1	9x3x.25	T
12	F-8																														
13	Cowl..8EQH-84	3155	135	135	21500	5659	9.00/20-10	10.0/20-12	Own 8EQ	8-3 1/2 x4 3/4	337	6.4	255	145-3600	3-2.87x5.0	Y	Own 7EQH	5	Own 8QH	SF	H	**-7.17	Own 7EQ	O4IHV	485	729	C	TX	61.06	9x3x.25	T
14	Cowl..8E5QH-84	3205	159	159	21500	5769	9.00/20-10	10.0/20-12	Own 8EQ	8-3 1/2 x4 3/4	337	6.4	255	145-3600	3-2.87x5.0	Y	Own 7EQH	5	Own 8QH	SF	H	**-7.17	Own 7EQ	O4IHV	485	729	C	TX	85.06	9x3x.25	T
15	Cowl..8E5QH-84	3255	195	195	21500	5889	9.00/20-10	10.0/20-12	Own 8EQ	8-3 1/2 x4 3/4	337	6.4	255	145-3600	3-2.87x5.0	Y	Own 7EQH	5	Own 8QH	SF	H	**-7.17	Own 7EQ	O4IHV	485	729	C	TX	121.1	9x3x.25	T
16	Intern'l (2)...KB-1	960	113	125	4400	2250	6.00/16-4	7.00/16	Own GRD214	6-3 7/8 x4 1/2	213	6.3	160	82-3400	4-2 5/8 x6 1/2	N	Own HDS-B	3	Own R1050	8 1/2	H	3.72-5.11	Own F50	L41H	164	316	e	FX	38	6x2 1/4 x 1/4	T
17	.....KB-1M	875	102	113	4600	2150	6.00/16-4	6.50/16-6	Own GRD214	6-3 7/8 x4 1/2	213	6.3	160	82-3400	4-2 5/8 x6 1/2	N	O SA-HDS-B	3	Own R1050	8 1/2	H	3.72-5.11	Own F150	L41H	164	316	e	FX	.....	6 1/2 x2 1/4 x 1/2	T
18	.....KB-2	1010	125	125	5200	2285	6.00/16-4	7.00/16-6	Own GRD214	6-3 7/8 x4 1/2	213	6.3	160	82-3400	4-2 5/8 x6 1/2	N	Own HDS-B	3	Own R1050	8 1/2	H	3.72-5.11	Own F50	L41H	164	316	e	FX	50	6 1/2 x2 1/4 x 1/2	T
19	.....KB-3	1150	130	.....	6650	3000	7.00/16-6	7.50/16-6	Own GRD214	6-3 7/8 x4 1/2	213	6.3	160	82-3400	4-2 5/8 x6 1/2	N	Own HDS-B	3	Own R1150	SF	H	4.22-5.28	Own F150	L41H	195	367	e	FX	55	6 1/2 x2 1/4 x 1/2	T
20	.....KB-3M	1050	102	113	7000	2585	7.00/16-6	7.50/16-8	Own GRD214	6-3 7/8 x4 1/2	213	6.3	160	82-3400	4-2 5/8 x6 1/2	N	Own H41B	4	Own R1150	SF	H	4.22-5.28	Own F150	L41H	221	367	e	FX	.....	6 1/2 x2 1/4 x 1/2	T
21	(a).....KB-5	1320	135	177	15000	3705	6.50/20D	8.25/20	O-GRD 233	6-3 7/8 x4 1/2	233	6.3	181	93-3400	4-2 5/8 x6 1/2	N	Own H41B	4	Own R1360	SF	H	5.28-7.16	Own F350	LH4IH	294	509	e	FX	60	8x3x 1/4	T
22	(a).....KB-6	1775	134	176	16000	4625	7.00/20D	8.25/20	Own BLD250	6-3 5/8 x4 1/2	251	6.3	200	100-3200	4-2 3/4 x4 1/2	N	Own WT97A	5	Own R1560	SF	H	5.62-7.16	Own F470	LH4IHV	305	539	e	FX	60	8 1/4 x3x 1/4	T
23	(a).....KB-7	2350	134	176	18000	5055	7.50/20D	9.00/20	O-BLD 269	6-3 7/8 x4 1/2	269	6.3	222	100-3000	4-2 7/8 x4 1/2	N	Own F51	5	Own R1560	SF	H	6.50-7.16	Own F470	LH4IHV	368	633	e	FX	60	8 1/4 x3x 1/4	T
24	(a).....KB-8	3400	137	197	22000	6580	9.00/20D	10.00/24	O-RED 361	6-4 1/4 x4 1/2	361	6.3	282	126-3000	7-3 1/4 x10 1/4	Y	Own F51	5	Own R1572	SF	H	6.43-8.51	Own F553	LH4IHV	407	709	e	FX	60	8 1/4 x3 1/2 x 1/4	T
25	(a).....KB-10	4150	149	197	25000	7405	10.00/20D	11.00/24	Own RED401	6-4 1/4 x5	401	6.3	318	140-2800	7-3 1/4 x10 1/4	Y	Own F52	5	Own R1676	SF	H	6.43-8.05	Own F653	LH4IHV	484	829	e	FX	72	9 1/4 x3 1/2 x 1/4	T
26	(a).....KB-11	5600	149	197	30000	8430	10.00/20D	12.00/24	O-RED 450	6-4 3/4 x5	450	6.3	361	148-2600	7-3 3/4 x10 1/4	Y	Own F54	5	Tim R100	Hy	H	6.42-8 05	Own F750	WW4IA	746	1030	G	FX	72	10x3 1/4 x 1/4	T
27	(a).....KB-12	6550	155	215	31500	9175	11.00/20	12.00/20	O-Con. R6586	6-4 1/2 x5 3/4	586	6.0	175	200-2600	7-3 1/4 x13 1/4	Y	Own F55	5	Tim R100	Hy	H	** -6.42	Own F750	BW41A	746	.....	GS	FX	66	10x3 1/2 x 1/4	C
28	(a).....KBR-14	7150	161	215	35000	10100	11.00/20	12.00/24	O-Con. R6586	6-4 1/2 x5 3/4	586	6.0	475	200-2600	7-3 1/4 x13 1/4	Y	Own F55B	5	Tim U200P	2F	H	**-7.08	Own F750	BW41A	746	.....	GS	FX	72	10x3 1/2 x 1/4	C
29	.....W-3042-L	9900	179	227	30000	12530	10.00/20	11.00/22	Cum HB600	6-5 1/2 x5 1/2	672	17	554	254-2600	7-3 3/4 x15 3/4	Y	Spi 7741	4	Tim R-100	Hy	H	** -6 42	Own S6303	BW41A	690	.....	G	FX	84	10x3 1/2 x 1/4	T
30	.....W-4042-OH	11250	170	230	40000	13115	10.00/20	14.00/24	Cum HB600	6-4 1/2 x6	672	17	492	150-1800	7-4 1/2 x..	Y	Spi 7741	4	Tim 79750PA	2F	H	7.69-11.36	Own 82F	BW4IA	656	.....	G	FX	72	10x3 1/2 x 1/4	C
31	School Buses																														
32	.....KB-5	1440	195	.....	15000	3935	6.50/20D	8.25/20	Own GRD233	6-3 7/8 x4 1/2	233	6.3	181	93-3400	4-2 5/8 x6 1/2	N	Own H41B	4	Own R1360	SF	H	5.28-7.16	Own F350	LH4IH	294	509	C	FX	.....	8 1/4 x3 1/2 x 1/4	T
33	.....KB-6	1900	194	212	17000	4910	7.00/20D	8.25/20	Own BLD250	6-3 1/2 x4 1/2	251	6.3	200	100-3200	4-2 3/4 x4 1/2	N	Own WT97	5	Own R1560	SF	H	5.61-7.16	Own F470	LH4IHV	305	53	C	FX	.....	8 1/4 x3 1/2 x 1/4	T
34	.....KB-7	2525	212	248	19000	5770	7.50/20D	9.00/20	Own BLD269	6-3 7/8 x4 1/2	269	6.3	222	100-3000	4-2 7/8 x4 1/2	N	Own F51	5	Own R1560	SF	H	6.50-7.16	Own F470	LH4IHV	368	633	C	FX	.....	8 1/4 x3 1/2 x 1/4	T
35	.....KB-8	3675	230	251	22000	6990	9.00/20D	10.00/20	Own RED361	6-4 1/4 x4 1/2	361	6.3	282	126-3000	7-3 1/4 x10 1/4	Y	Own F51	5	Own R1572	SF	H	6.43-8.51	Own F553	LH4IHV	407	709	C	FX	.....	10x3 1/2 x 1/4	T
36	Kenworth(D)..521	.....	161	215	35000	12200	10 00/20	11.00/22	Cum HB6	6-4 1/4 x6	672	17.	500	150-1800	7-4 1/2 x16 1/2	Y	BL 8241	4	Tim U200P	DR	H	5.42-7.84	Tim 36000 TW	Ws4IA	752	1050	a	TD	72	9 1/4 x3 1/4 x 1/4	C
37	585	.....	150	215	30000	10130	10.00/20	11.00/22	Bu LO525	6-4 1/2 x5 1/2	5255	5.8	385	150-2200	7-3x11 1/2	Y	Fu 5A620	5	Tim U200P	.....		6.14	Tim 36000 TW	Ws4IA	752	.....	a	.....	70	9 1/2 x3 1/4 x 1/4	.....
38	Linn.....L-2	.....	120	....	9000	6000	7.50/20S	8.25/20S	Her QXC3	6-3 3/4 x4 1/2	221	...	159	77-3200	7-1 3/4 x10 1/4	N	WGT9	4	Own 600	N	N	None	Tim F30B28H	L4IH	306	478	a	T	.....	None	.....
39	.....L-4	.....	156	....	9200	6200	7.50/20S	8.25/20	Her QXC3	6-3 3/4 x4 1/2	221	...	159	77-3200	7-1 3/4 x10 1/4	N	WGT9	4	Own 600	N	N	None	Tim F30B28H	L4IH	306	478	a	X	.....	None	.....
40	.....L-6	.....	169	....	12700	7700	7.50/20D	8.25/20	Her JXE3	6-3 1/2 x4 1/4	245	6.5	184	91-3200	7-2 1/2 x10 1/4	N	WGT9	4	Own 600T	N	N	None	Tim F30B28H	L6IH	486	744	a	X	.....	None	.....
41	.....L-8	.....	205	....	12900	7900	7.50/20D	8.25/20	Her JXE3	6-3 1/2 x4 1/4	245	6.5	184	91-3200	7-2 1/2 x10 1/4	N	WGT9	4	Own 600T	N	N	None	Tim F30B28H	L6IH	486	744	a	X	.....	None	.....
42	Mar. Her...DVL-4	.....	90	118	$6750	.....	7.50/16S	8.25/18S	Willys MB	4-3 1/8 x4 1/2	134	6.4	105	60-4000	3-2.33x5.48	Y	Own	3	(Front Drive)	.....	.....	7.10	Own	4IH	202	327	M2	.....	.....	None	.....
43	Peterbilt(D)280DD	.....	165	Opt	35000	12500	10.00/20D	11.00/22	Cum HB600	6-4 7/8 x6	672	17.	500	150-1800	7-4 1/2 x16 1/2	Y	Spi 8041	12	U-200P	2F	R	** -6.42	Tim 36000W	Ws4IA	800	1250	a	FD	80 1/2	10 1/2 x3 1/2 x 1/2	TL
44	Reo.....D-19XA	.....	125	125	8000	4340▲	7.00/20S	8.25/20S	Own GC 245	6-3 1/2 x4 1/4	245	6.2	192	89-3100	7-2 5/8 x10.7	Y	WG T97	4	Tim 53547	SF	H	5.66-6.67	Tim 30000	T41H▼	310	482	var	TX	60	8 1/4 x2 1/4 x 1/2	T
45	.....D-19A	.....	125	125	14000	4740▲	7.50/20	8.25/20	Own GC 245	6-3 1/2 x4 1/4	245	6.2	192	89-3100	7-2 5/8 x10.7	Y	WG T97	4	T-E100-E300	HF	H	5.28-6.8*	Tim 30000	T41VH▼	310	482	var	TX	60	8 1/4 x2 1/4 x 1/2	T
46	.....D-19T	.....	125	125	14000	5330▲	8.25/20	8.25/20	Own GC 245	6-3 1/2 x4 1/4	245	6.2	192	89-3100	7-2 5/8 x10.7	Y	WG T97	4	Tim E300	HFd	H	6.13-8.10	Tim 30000	T41VH▼	310	482	var	TX	60	8 1/4 x2 1/4 x 1/2	T
47	.....D-19B	.....	150	150	14000	4900▲	7.50/20	8.25/20	Own GC 245	6-3 1/2 x4 1/4	245	6.2	192	89-3100	7-2 5/8 x10.7	Y	WG T97	4	T-E100-E300	HF	H	5.28-6.8*	Tim 30000	T41VH▼	310	482	var	TX	60	8 1/4 x2 1/4 x 1/2	T
48	.....D-19C	.....	165	165	14000	5090▲	7.50/20	8.25/20	Own GC 245	6-3 1/2 x4 1/4	245	6.2	192	89-3100	7-2 5/8 x10.7	Y	WG T97	4	T-E100-E300	HF	H	5.28-6.8*	Tim 30000	T41VH▼	310	482	var	TX	80	8 1/4 x2 1/4 x 1/2	T
49	.....D-19L	.....	187	187	14000	5080▲	8.25/20	8.25/20	Own GC 245	6-3 1/2 x4 1/4	245	6.2	192	89-3100	7-2 5/8 x10.7	Y	WG T97	4	T-E100-E300	HF	H	5.28-6.8*	Tim 30000	T41VH▼	310	482	var	TX	100	8 1/4 x2 1/4 x 1/2	T
50	.....D-21A	.....	125	125	15500	4920▲	7.50/20	8.25/20	Own GC 288	6-3 1/2 x5	288	6.2	225	96-3000	7-2 5/8 x10.7	Y	WG T97	4	Tim E100	HF	H	5.28-6.8*	Tim 31013	T41VH▼	310	482	var	TX	123	9x3x 1/4	Tf
51	.....D-21T	.....	125	125	15500	5380▲	8.25/20	8.25/20	Own GC 288	6-3 1/2 x5	288	6.2	225	96-3000	7-2 5/8 x10.7	Y	WG T97	4	Tim E100	HF	H	5.28-6.8*	Tim 31013	T41VH▼	310	482	var	TX	60	8 1/4 x2 1/4 x 1/2	T
52	.....D-21B	.....	150	150	15500	5230▲	8.25/20	8.25/20	Own GC 288	6-3 1/2 x5	288	6.2	225	96-3000	7-2 5/8 x10.7	Y	WG T97	4	Tim E300	HFd	H	6.13-8.10	Tim 31013	T41VH▼	310	482	var	TX	60	8 1/4 x2 1/4 x 1/2	T
53	.....D-21C	.....	165	165	15500	5270▲	8.25/20	8.25/20	Own GC 288	6-3 1/2 x5	288	6.2	225	96-3000	7-2 5/8 x10.7	Y	WG T97	4	Tim E100	HF	H	5.28-6.8*	Tim 31013	T41VH▼	310	482	var	TX	85	9x3x 1/4	T
54	.....D-21R-A	.....	130	130	18000	6040▲	9.00/20	9.00/20	Own GC 310	6-3 5/8 x5	310	6.2	243	101-3000	7-2 5/8 x10.7	Y	Cla 205V-VO	5	Tim H200-300	IFd	H	7.3*	Tim 31104	T41VH▼	344	584	var	TX	100	9x3x 1/4	Tf
55	.....D-21R-T	.....	130	130	18000	6380▲	9.00/20	9.00/20	Own GC 310	6-3 5/8 x5	310	6.2	24	101-3000	7-2 5/8 x10.7	Y	Cla 205V-VO	5	Tim H300	HFd	H	5.95-7.3	Tim 31104	T41VH▼	344	584	var	TX	65	9x3x 1/4	T
56	.....D-21R-B	.....	150	150	18000	6080▲	9.00/20	9.00/20	Own GC 310	6-3 5/8 x5	310	6.2	243	101-3000	7-2 5/8 x10.7	Y	Cla 205V-VO	5	Tim H100-300	IFd	H	6.16-6.8*	Tim 31104	T41VH▼	344	584	var	TX	65	9x3x 1/4	T
57	.....D-21R-C	.....	165	165	18000	6180▲	9.00/20	9.00/20	Own GC 310	6-3 5/8 x5	310	6.2	243	101-3000	7-2 5/8 x10.7	Y	Cla 205V-VO	5	Tim H100-300	HFd	H	6.16-6.8*	Tim 31104	T41VH▼	344	584	var	TX	85	9x3x 1/4	T
58	.....D-21R-L	.....	185	185	18000	6430▲	9.00/20	9.00/20	Own GC 310	6-3 5/8 x5	310	6.2	243	101-3000	7-2 5/8 x10.7	Y	Cla 205V-VO	5	Tim H100-300	HFd	H	6.16-6.8*	Tim 31104	T41VH▼	344	584	var	TX	100	9x3x 1/4	Tf
59	.....D-22A	.....	130	130	20500	6220▲	9.00/20	9.00/20	Own GC 310H	6-3 5/8 x5	310	6.2	248	104-3000	7-2 5/8 x10.7	Y	Cla 205V-VO	5	Tim H300	HFd	H	5.95-7.3	Tim 31104	T41VH▼	370	640	var	TX	65	9x3x 1/4	T
60	.....D-22T	.....	130	130	20500	6630▲	9.00/20	9.00/20	Own GC 310H	6-3 5/8 x5	310	6.2	248	104-3000	7-2 5/8 x10.7	Y	Cla 205V-VO	5	Tim H300	HFd	H	5.95-7.3	Tim 31104	T41VH▼	370	640	var	TX	65	9x3x 1/4	T
61	.....D-22B	.....	150	150	20500	6140▲	9.00/20	9.00/20	Own GC 310H	6-3 5/8 x5	310	6.2	24	104-3000	7-2 5/8 x10.7	Y	Cla 205V-VO	5	Tim H Series	HFd	H	6.16-7.3*	Tim 31104	T41VH▼	370	643	var	TX	85	9x3x 1/4	T
62	.....D-22C	.....	165	165	20500	6380▲	9.00/20	9.00/20	Own GC 310H	6-3 5/8 x5	310	6.2	24	104-3000	7-2 5/8 x10.7	Y	Cla 205V-VO	5	Tim H Series	HFd	H	6.16-6.8*	Tim 31104	T41VH▼	370	640	var	TX	100	9x3x 1/4	Tf
63	.....D-22L	.....	185	185	20500	6430▲	9.00/20	9.00/20	Own GC 310H	6-3 5/8 x5	310	6.2	243	104-3000	7-2 5/8 x10.7	Y	Cla 205V-VO	5	Tim H100-300	IFd	H	6.16-6.8*	Tim 31104	T41VH▼	370	640	var	TX	120	9 1/2 x3 1/4 x x 1/4	Tf
64	.....D-22R-B	.....	150	150	20500	6480▲	9.00/20	9.00/20	Own GC 310H	6-3 5/8 x5	310	6.2	243	104-3000	7-2 5/8 x10.7	Y	Cla 205V-VO	5	Tim L100-200	IF2	H	5.28-8.22	Tim 32500	T41VH▼	370	640	var	TX	120	9 1/2 x3 1/4 x x 1/4	Tf
65	.....D-23T	.....	130	130	23000	8000▲	9.00/20	10.00/20	Con T-6427	6-4 1/4 x4 1/2	427	6.2	336	153-2800	7-2 1/2 x13.6	Y	Cla 270V-VO	5	Tim L100-300	HFd	H	5.28-6.16*	Tim 32500	Ws41A	514	644	var	TX	65	9 1/2 x3 1/4 x x 1/4	T
66	.....D-23L	.....	185	185	23000	7900▲	10.00/20	10.00/20	Con T-6427	6-4 1/4 x4 1/2	427	6.2	336	153-2800	7-2 1/2 x13.6	Y	Cla 270V-VO	5	Tim L100	HF	H	5.28-6.16	Tim 32500	Ws41A	514	644	var	TX	120	9 1/2 x3 1/4 x x 1/4	Tf
67	.....D-23R-T	.....	130	130	25000	8580▲	10.00/20	11.00/20	Con T-6427	6-4 1/4 x4 1/2	427	6.2	336	153-2800	7-2 1/2 x13.6	Y	Cla 270V-VO	5	Tim Q100-300	HFd	H	6.16*	Tim 35011	Ws41A	638	934	var	TX	65	9 1/2 x3 1/4 x x 1/4	T
68	.....D-23R-B	.....	150	150	25000	8570▲	10.00/20	11.00/20	Con T-6427	6-4 1/4 x4 1/2	427	6.2	336	153-2800	7-2 1/2 x13.6	Y	Cla 270V-VO	5	Tim S230	HF2	H	7.81*	Tim 35011	Ws41A	712	1038	var	TX	85	9 1/2 x3 1/4 x x 1/4	T
69	.....D-23R-BL	.....	150	150	25000	9080▲	10.00/20	11.00/20	Con T-6427	6-4 1/4 x4 1/2	427	6.2	336	153-2800	7-2 1/2 x13.6	Y	Cla 270VO&▪15	5	Tim S200	HF2	H	7.81*	Tim 35011	Ws41A	712	1038	var	TD	85	9 1/2 x3 1/4 x x 1/4	T
70	.....D-23R-L	.....	185	185	25000	8300▲	10.00/20	11.00/20	Con T-6427	6-4 1/4 x4 1/2	427	6.2	336	153-2800	7-2 1/2 x13.6	Y	Cla 270V-VO	5	Tim Q100-300	IFd	H	7.16*	Tim 35011	Ws41A	638	934	var	TX	120	9 1/2 x3 1/4 x x 1/4	Tf
71	.....30-A	.....	▲145	145	32000	11000▲	11.00/20	11.00/24	Con R-6513	6-4 1/2 x5 3/8	513	5.9	400	173-2800	7-3 1/4 x14.7	Y	Spi6252A-53▲	5	TS300-U200	HFd	H	7.08*	Tim 36000	Ws41A	722	1038	var	TX	67	10 1/2 x3 1/4 x 1/2	T
72	.....30-B	.....	▲165	165	32000	11750▲	11.00/20	11.00/24	Con R-6513	6-4 1/2 x5 3/8	513	5.9	400	173-2800	7-3 1/4 x14.7	T	Spi6252A-53▲	5	TS300-U200	HFd	H	7.08*	Tim 36000	Ws41A	722	1038	var	TI	87	10 1/2 x3 1/4 x 1/2	T
73	.....31-A	.....	▲145	145	32000	11000▲	11.00/20	11.00/24	Con R-6602	6-4 1/2 x5 3/8	602	5.9	464	202-2800	7-3 1/4 x14.7	Y	Spi6252A-53▲	5	TS300-U200	HFd	H	7.08*	Tim 36000	Ws41A	722	1038	var	TI	67	10 1/2 x3 1/4 x 1/2	T
74	.....31-B	.....	▲165	165	32000	11750▲	11.00/20	11.00/24	Con R-6602	6-4 1/2 x5 3/8	602	5.9	464	202-2800	7-3 1/4 x14.7	Y	Spi6252A-53▲	5	TS300-U200	HFd	H	7.08*	Tim 36000	Ws41A	722	1038	var	TI	87	10 1/2 x3 1/4 x 1/2	T

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▲—Includes Cab.
•—2-Speed Axle Available.
▼—Lockheed Type Front and Timken Dual Primary Rear Brakes.
■—Two speed rear axle with vacuum shift.
▼—6231A Spicer Auxiliary Transmission.
▪—8031 F-G Spicer Transmission available.
▲—Reinforcement 6.58x2.21x.125 Inside Sidersil from Front to Rear Spring Brackets.
▲—Special W.B.'s available on request.
♦—8500 for 8.25/15 tires.

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All its service-proved features continue to make Exide the outstanding battery for the needs of today.

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THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • *Exide Batteries of Canada, Limited, Toronto*

(Continued from Page 114)

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Sp'ds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location, Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
	Reo, con't. School Buses,																													
1	C119-31		152	152			7.00/20	7.00/20	Own GC 245	6–3½x4½	245	6.2	192	89–3100	7–2⅝x10.7	Y	Cla 185F	4	Tim 53547	SF	H	6.16	Tim 30000	T41VH▼	310	482	var	TX		9x3x¼	T
2	C119L-43		188	188			7.50/20	7.50/20	Own GC 245	6–3½x4½	245	6.2	192	89–3100	7–2⅝x10.7	Y	Cla 185F	4	Tim 53547	SF	H	6.67	Tim 31013	T41VH▼	310	482	var	TX		9x3x¼	T
3	C119LS-49		206	206			7.50/20	7.50/20	Own GC 245	6–3½x4¼	245	6.2	192	89–3100	7–2⅝x10.7	Y	WG T97	4	Tim 53547	SF	H	6.67	Tim31013	T41VH▼	310	482	var	TX		9¼x3⅛x¼	T
4	C121-49		206	206			8.25/20	8.25/20	Own GC 288	6–3½x5	288	6.2	225	96–3000	7–2⅝x10.7	Y	Cla 231F	4	Tim E100	HyF	H	6.80	Tim31104	T41VH▼	314	532	var	TX		9¼x3⅛x⅛x⅛	T
5	C121S-55		224	224			8.25/20	8.25/20	Own GC 288	6–3½x5	288	6.2	225	96–3000	7–2⅝x10.7	Y	WG T97	4	Tim E100	HyF	H	6.80	Tim31104	T41VH▼	314	532	var	TX		9¼x3⅛x⅛x⅛	T
6	C122-55		224	224			9.00/20	9.00/20	Own GC 310	6–3⅝x5	310	6.2	243	101–3000	7–2⅝x10.7	Y	Cla 231F	4	Tim H100	HyF	H	7.20	Tim31104	T41VH▼	344	584	var	TX		9¼x3⅛x⅛x⅛	T
7	C–122–L		252	252			9.00/20	9.00/20	Own GC 310	6–3⅝x5	310	6.2	243	101–3000	7–2⅝x10.7	Y	Cla 231F	4	Tim H100	HyF	H	7.2	Tim 32500	T41VH	344	588	var	TX		9¼x3⅛x⅛x⅛	T
8	Sterling HD97		148	175	24000	9150	9.00/20	11.00/20	Wau 6MZA	6–4¼x4¾	404	5.6	290	130–3000	7–2⅝x12½	Y	Fu 5A43	5	Tim Q100DPH	FHy	R	5.29–7.80	Tim 35011H	T41HV	524	926	A	TX	67	9x7x¼	A
9	HD105		148	175	24000	9550	10.00/20	11.00/22	Wau 6MZA	1–4¼x4¾	401	5.6	290	130–3000	7–2⅝x12½	Y	Fu 5A43	5	Tim R100DPH	FHy	R	5.29–7.40	Tim 35011H	T41HV	524	926	A	TX	67	9x3¼x¼	A
10	HD115		148	175	32000	10650	10.00/20	11.00/24	Wau 6SRKR	6–4⅝x5½	517	5.5	368	125–2250	7–3x13⅜	Y	Fu 5A62	5	Tim S200P	2F	R	6.42–9.83	Tim 36000TW	Ws4IA	722	1054	A	TX	67	9x3¼x¼	A
11	HD145		148	175	36000	11250	11.00/20	12.00/24	Wau 6SRKR	6–4⅝x5½	517	5.5	368	125–2250	7–3x13⅜	Y	Fu 5A62	5	Tim 79721W	2F	R	7.69–11.30	Tim 36000TW	Ws4IA	670	1118	A	TX	67	9¼x3⅝x¼	A
12	(D) HD115H		158	185	32000	11950	10.00/20	11.00/24	Cum HB600	6–4½x6	672	17.5	500	150–1800	7–4½x16½	Y	Fu 4B86	4	Tim S200P	2F	R	6.42–9.83	Tim 36000TW	Ws4IA	670	1118	A	TX	67	9¼x3⅝x⅝	A
13	(D) HD145H		158	185	36000	12550	11.00/20	12.00/24	Cum HB600	6–4½x6	672	17.5	500	150–1800	7–4½x16½	Y	Fu 4B86	4	Tim 79721W	2F	R	7.69–11.30	Tim 36000TW	Ws4IA	722	1054	A	TX	68	9x3¼x¼	A
14	HC97		148	175	24000	9200	9.00/20	11.00/20	Wau 6MZA	6–4¼x4¾	404	5.6	290	130–3000	7–2⅝x12½	Y	Fu 5A43	5	Own 97H	CD	R	6.70–10.82	Tim 35011H	T41HV	518	852	A	TX	67	9x7x¼	A
15	HC105		148	175	28000	9700	10.00/20	11.00/20	Wau 6MZA	6–4¼x4¾	404	5.6	290	130–3000	7–2⅝x12½	Y	Fu 5A43‡	15	Own 137H	CD	R	6.70–10.82	Tim 35011H	TL41HV	540	842	A	TX	67	9x3¼x¼	A
16	HC115		148	175	32000	10350	10.00/20	11.00/24	Wau 6SRKR	6–4⅝x5½	517	5.5	368	125–2250	7–3x13⅜	Y	Fu 5A62‡	15	Own 137W	CD	R	6.70–10.82	Tim 36000TW	Ws4IA	648	1064	A	TX	67	9x3¼x¼	A
17	HC144		148	175	36000	11250	10.00/22	12.00/24	Wau 6SRKR	6–4⅝x5½	517	5.5	368	125–2250	7–3x13⅜	Y	Fu 5A62‡	15	Own 148W	CD	R	6.70–10.82	Tim 36000TW	Ws4IA	708	1102	A	TX	67	9¼x3⅛x⅛x⅛	A
18	HC147		148	175	36000	11500	10.00/22	12.00/24	Wau 6SRKR	6–4⅝x5½	517	5.5	368	125–2250	7–3x13⅜	Y	Fu 5A62‡	15	Own 147W	CD	R	6.70–10.82	Tim 36000TW	Ws4IA	708	1102	A	TX	67	9¼x3⅛x⅛x⅛	A
19	HC175		167	185	45000	14600	12.00/24†	14.00/24‡	Wau 145GK	6–5¼x6	779	6.2	585	186–2100	7–3½x17¾	Y	Fu 4B86●	12	Own 175W	CD	R	7.31–12.42	Tim 27454W	Ws4IA	786	1212	A	TX	77	9¼x3⅝x⅛x⅛	A
20	HC250		178	190	60000	18400	14.00/24‡	14.00/24‡	Wau 145GK	6–5¼x6	779	6.2	585	186–2100	7–3½x17¾	Y	Fu 4B86●	12	Own 251W	CD	R	7.31–12.42	Tim 27454W	Ws4IA	786	1212	A	JX	95	12x3½x⅜	AL
21	(D) HC115H		167	185	32000	12250	10.00/20	11.00/24	Cum HB600	6–4½x6	672	17.5	500	150–1800	7–4½x16½	Y	Fu 4B86●	12	Own 137W	CD	R	6.70–10.82	Tim 36000TW	Ws4IA	648	1064	A	TX	77	9x3¼x¼	A
22	(D) HC175H		167	185	45000	14930	12.00/24†	14.00/24‡	Cum HBD600	6–4½x6	672	17.5	500	150–1800	7–4½x16½	Y	Fu 4B86●	12	Own 175W	CD	R	7.31–12.42	Tim 27454W	Ws4IA	786	1212	A	TX	77	9¼x3⅝x⅛x⅛	A
23	(D) HC250H		178	190	60000	18700	14.00/24‡	14.00/24‡	Cum HBD600	6–4½x6	672	17.5	500	150–1800	7–4½x16½	Y	Fu 4B86●	12	Own 251W	CD	R	7.31–12.42	Tim 27454W	Ws4IA	786	1212	A	JX	95	12x3½x⅜	AL
24	Studebaker 2R5	972	112	112	4600	2125	6.00/16S	6.50/16S	Own 1R	6–3x4	170	6.5	134	80–4000	4–2⅛x5⅛	N	Own 673519	3	Own 673874	Hy	H	**–4.82	Own 677574	Wg4IH	170	276	CO	2I	40	7x2¼x¼	T
25	2R10	1038	122	122	6100	2400	6.50/16S	7.50/16S	Own 1R	6–3x4	170	6.5	134	80–4000	4–2⅛x5⅛	N	Own 673519	3	Own 677806	SF	H	5.57–4.86	Own 677574	Wg4IH	198	314	CO	2I	50	7⅛x2⅛x⅛	T
26	2Rf5–21	1186	121	121	7800	3005	7.00/17S	7.00/20	Own 2R	6–3x4	170	6.5	134	80–4000	4–2⅛x5⅛	N	Own 676044	4	Own 677768	SF	H	5.83–6.66	Own 677091	LH4IH	216	342	Ce	TX	50⅛	8x2⅛x⅛	T
27	2R15–31	1205	131	131	10000	3065	7.00/17S	7.00/20	Own 2R	6–3x4	170	6.5	134	80–4000	4–2⅛x5⅛	N	Own 676044	4	Own 677768	SF	H	5.83–6.66	Own 677091	LH4IH	216	342	Ce	TX	60⅛	8⅛x2⅛x⅛	T
28	2R16	1291	131	195	14000	3695	6.50/20 D	8.25/20	Own 3R	6–3⅞x4⅛	226	6.5	174	94–3400	4–2⅛x5⅛	N	Own 676045	4	Own 675732▲	SF	H	6.66–5.66	Own 677091	LH4IH	216	342	Ce	TX	60⅛	8⅛x2⅛x⅛	T
29	2R17	1592	131	195	16000	4180	7.50/20 D	8.25/20	Own 3R	6–3⅞x4⅛	226	6.5	174	94–3400	4–2⅛x5⅛	N	Own 676045	4	Own 675571▲	Hy	H	6.80–	Own 674484	LH4IH	280	442	Ce	TX	60⅛	8⅛x2⅛x⅛	T
30	Ward La Fr. D-1		149	220	25000	▲9500	10.00/20	11.00/20	Con T6427	6–4⅞x4⅞	427	5.1	340	152–2600	7–2⅞x13½	Y	Ful 5A430	5	Tim Q-100	B	R	**–6.83	Tim 35017TW	Ws4A	600	928	C	TM	68¼	9¾x3x¼	
31	D-1C		149	220	29000	▲9500	11.00/20	11.00/22	Con T6427	6–4⅞x4⅞	427	5.1	340	152–2600	7–2⅞x13½	Y	Ful 5A430	5	Tim S-200	S2	R	**–7.08	Tim 35017TW	Ws4A	673	1031	C	TM	68¼	9¾x3x¼	
32	D-2K		149	220	29000	▲10000	11.00/20	11.00/22	Wau 140GK	6–4½x5½	525	6.4	425	168–2400	7–2¾x13⅜	Y	Ful 5A620	5	Tim S-200	S2	R	**–7.84	Tim 35017TW	Ws4A	673	1031	C	TM	68¼	10x3½x⅛	
33	D-2Z		149	220	29000	▲10000	11.00/20	11.00/22	Wau 140GZ	6–4½x5½	554	6.4	456	184–2400	7–3¼x13⅜	Y	Ful 5C650	5	Tim S-200	S2	R	**–7.84	Tim 35017TW	Ws4A	673	1031	C	TM	68¼	10x3½x⅛	
34	D-3		149	220	29000	▲10000	11.00/20	11.00/22	Con R6572	6–4¼x5½	572	5.9	440	189–2600	7–3¼x14½	Y	Ful 5C650	5	Tim S-200	S2	R	**–7.84	Tim 35017TW	Ws4B	673	1031	C	TM	68¼	10x3½x⅛	
35	D-3S		149	220	29000	▲10000	11.00/20	11.00/22	Con R6602	6–4¼x5½	602	5.9	463	198–2600	7–3¼x14½	Y	Ful 5C650	5	Tim S-200	S2	R	**–7.84	Tim 35017TW	Ws4B	673	1031	C	TM	68¼	10x3½x⅛	
36	D-5		149	220	35000	▲12500	11.00/22	11.00/22	Cum HB600	6–4½x6	672	17	500	150–1800	7–4½x16¾	Y	Ful 5C650	5	Tim U-200	S2	R	**–6.42	Tim 27463	Ws4B	681	1041	C	TM	68¼	10x3½x⅛	
37	Willys (Sd.Del.)463	1450•	104	104	4000	•2752	6.50/15S		Own 463	4–3⅛x4⅜	134	6.5	105	63–4000	3–2.33xo 48	N	WG T96	3	Spl 23–1	Hy½	H	4.88–5.38	Own I Tr	B4IH	133	220	a	2I		5x2¼x.063	TfD
38	Willys 2WD	1425•	118	118	5300	•2788	6.50/16S‡	7.00/16S	Own 2WD	4–3⅛x4⅜	134	6.5	105	60–4000	3–2.33x5.48	N	WG T90E	3	Tim51540NX3	S½	H	5.38–6.17	Cla F-154	B4IH	176	276	a	2I	42.28	5½x2x⅛	TD
	Four-Wheel-Drive																													
39	Corbitt 22FG		159	Opt	22000		9.00/20	10.00/20	Con B6371	6–4½x4½	371	6.0	280	100–2600	7–2⅞x13½	Y	Fu 5A43	5	Tim R2090H	2F	H	** –8.43	Tim F2090H	L4IHV		868	a	TD	74	9x3x¼	DL
40	Dodge B-1-P W		126	126	8700		7.50/16–S	9.00/16–S	Own T-137	6–3¼x4½	230	6.7	185	94–3200	4–2½x4.8	Y	NP-38580	4	Own T-137	HyF	H	4.8–5.8	Own T-137	O4IH	210	311	c	TX	52½	⅛x2⅛x6½	C
41	FWD HA		132	168	17000	▲7470	8.25/20D	10.00/20	Wau B2	6–4¼	320	5.9	237	104–3000	7–2⅝x10¼	Y	Own H	5	Own H	SF	H	6.6 –9.01	Own H	L4IHV	391	807	a	T4	79½	9x3x¼	T
42	HR		132	168	20000	▲8000	9.00/20	10.00/20	Wau MZA	6–4¼x4¾	404	5.6	291	129–2800	7–2⅝x12⅝	Y	Own H	5	Own H	SF	H	6.6 –9.01	Own H	L4IHV	391	807	a	T4	79½	9x3x¼	T
43	HG		154	154	20000	▲8050	9.00/20	10.00/20	Wau MZA	6–4¼x4¾	404	5.6	291	129–2800	7–2⅝x12⅝	Y	Own H	5	Own H	SF	H	6.6 –9.01	Own H	L4IHV	391	807	a	T4	89¾	7⅛x3x⅜	T
44	SU		150	182	28000	▲10570	11.00/20D	11.00/20	Wau 8RKR	6–4⅝x5½	517	5.5	365	126–2400	7–3x13⅛	Y	Own U	5	Own U	BF	H	6.7 –9 .8	Own U	L4IHV	512	867	a	T4	90	8⅛x3x⅜	C
45	YU		150	182	28000	11570	11.00/20D	11.00/20	Wau 140GK	6–4½x5½	525	6.1	425	142–2200	7–3¼x13⅜	Y	Own S	5	Own YU	SF	H	** –5 .7	Own YU	L4IHV	517	814	a	T4	90	8⅛x3x⅜	C
46	ZU		150	182	33000	12540	11.00/20D	11.00/20	Wau 140GZ	6–4½x5½	554	6.4	460	188–2600	7–3¼x13⅜	Y	Own ZU	5	Own ZU	SF	H	6.79–12.59	Own ZU	L4IHV	640	1106	a	T4	90	10⅛x3x⅜	C
47	M7		150	180	38600	▲15500	12.00/20D	12.00/24	Wau 145GK	6–5¼x6	779	6.2	585	186–2000	7–3½x17¾	Y	Own M	10	Tim 1758	2F	H	** –7.33	Wis F409	Ws4IA	584	976	a	T4	90	10⅛x3x⅜	C
48	(D) M7D		150	180	38600	▲15700	12.00/20D	12.00/24	Bu DC844	6–5¼x6½	844	...	605	180–1800	7–3¾x17	Y	Own M	10	Tim 1758	2F	H	** –7.33	Wis F409	Ws4IA	584	976	a	T4	90	10⅛x3x⅜	C
49	M10		150	180	44000	▲16800	11.00/24D	12.00/24	Wau 145GK	6–5¼x6	779	6.2	585	186–2000	7–3½x17¾	Y	Own M	10	Tim 79721	2F	H	** –7.7	Wis F409	Ws4IA	614	1030	a	T4	90	10⅛x3x⅜	C
50	(D) M10D		150	180	44000	▲16400	11.00/24D	12.00/24	Bu DC844	6–5¼x6½	844	...	605	180–1800	7–3¾x17	Y	Own M	10	Tim 79721	2F	H	** –7.7	Wis F409	Ws4IA	614	1030	a	T4	90	10⅛x3x⅜	C
51	Marmon-Herr. MH440-4		158	170	24000	▲9300	9.00/20D	10.00/20	Her WXLC3	6–4¼x4¾	404	5.4	293	118–2800	7–2⅝x13¼	Y	Fu 5A430	5	Own 1121	2B	H	** –8.43	Own 121	W A	584	887	c	F	72	9⅛x3x¼	T
52	MH555-4		161	173	30000	▲10200	10.00/20D	11.00/20	Her RXC	6–4⅝x5¼	529	6.3	390	131–2200	7–3x13¼	Y	Fu 5A620	5	Own 1122	2B	H	** –8.15	Own 122	W A	692	1039	c	F	72	10⅛x3x⅛	T
53	(C) R5-4		134	134	15500	▲8477	7.50/20D	7.50/20	Ford	8–3⅛x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Ford	S	H	** –6.67	Own M5	F H	303	563	a	F	60⅛	7x2¾x⅛	T
54	(C) R6-4		158	158	15500	▲9973	7.50/20D	7.50/20	Ford	8–3⅛x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Ford	S	H	** –6.67	Own M5	F H	303	563	a	F	84⅛	7x2¾x⅛	T
55	(C) LD6P-4		114				15•		Ford	8–3⅛x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Ford	S	H	** –4.11	Own O	F H	162		A	F		40⅛ 5⅛x2¼x⅛	T
56	(C) LD7-4		114		4700	▲2719	15•		Ford	8–3⅛x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Ford	S	H	** –4.11	Own O	F H	162		A	F		40⅛ 5⅛x2¼x⅛	T
57	(C) R3-4		122		6800	▲4500	7.50/17	7.50/17	Ford	8–3⅛x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Ford	S	H	** –4.11	Own O	F H	162		A	F		40⅛ 5⅛x2¼x⅛	T
58	(C) R4-4		134		7500		7.00/18S	7.00/18	Ford	8–3⅛x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Ford	S	H	** –4.86	Own I	F H	186		A	F	48	8x2¼x⅛	T
59	(C) R5-G-COE4		110	158	15500		7.50/20D	7.50/20	Ford	8–3⅛x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Ford	S	H	** –5.33	Own	F H	303	563	A	F	60⅛	7x2¾x⅛	T
60	(C) Q5-4		136		21500		9.00/20	10.00/20	Ford	8–3½x4½	337	6.4	255	145–3600	3		Ford	5	Ford	H	H	** –6.67	Own	F H	303	563	A	F	60⅛	7.08x2.8x¼	T
61	(C) Q6-4		160		21500	▲7300	9.00/20	10.00/20	Ford	8–3½x4½	337	6.4	255	145–3600	3		Ford	5	Ford	H	H	6.80 Own		F H	350	583	A	F	61	9x3x¼	T
62	Q7-4		196		21500	▲7500	9.00/20	10.00/20	Ford	8–3½x4½	337	6.4	255	145–3600	3		Ford	5	Ford	H	H	** –6.80	Own	F H	350	583	A	F	85	9x3x¼	
63	Oshkosh W-312		149	205	25000	▲10200	10.00/20D	11.00/20	Her WXLC03	6–4¼x4¾	404	6.3	312	139–2600	7–2½x13¾	Y	Fu 5A43	10	Own W312	SF	H	** –6.8	Own W312	L4IH	510	876	G	TX	82	8⅛x7x¼	TF
64	W1700		150	205	28000	▲11000	11.00/20D	12.00/20S	Her RXC	6–4⅝x5¼	529	5.4	395	131–2200	7–3x13¼	Y	Fu 5A620	5	Own W1700	SF	H	** –6.4	Own 1700	L4IH	570	980	G	TX	82	8⅛x8x⅜	TF
65	W-700		150	205	30000	▲12000	11.00/20D	12.00/20	Her RXCO	6–4⅝x5¼	529	5.4	395	131–2200	7–3x12⅝	Y	Fu 5A650	10	Own W700	2F	H	** –6.8	Own W700	L4IH	630	975	G	TX	82	10⅛x3x⅛	TF
66	(D) W-703D		150	205	30000	▲12700	11.00/20D	12.00/20	Her DRXC	6–4⅝x5¼	329	15.3	398	147–2200	7–3⅛x13¼	Y	Fu 5A650	10	Own W700	2F	H	** –6.8	Own W700	L4IHA	630	975	G	TX	82	10⅛x3x⅜	TF
67	W-703		150	205	30000	▲12200	11.00/20D	12.00/20	Her RXLD	6–4⅝x5¼	558	5.4	430	150–2200	7–3½x13¼	Y	Fu 5A650	10	Own W700	2F	H	** –6.8	Own W700	L4IH	630	975	G	TX	82	10⅛x3x⅜	TF
68	W-705		150	205	30000	▲12200	11.00/20D	12.00/20	Her RXLD	6–4¾x5¼	558	5.4	430	150–2200	7–3½x13¼	Y	Fu 5A650	10	Own W700	2F	H	** –6.8	Own W700	L4IH	630	975	G	TX	82	10⅛x3x⅜	TF

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• Includes Cab. † Rear only: Front 11.00/24. ‡ Rear only: Front 12.00/24. ● Auxiliary transmission Own FJ. ▲ 2 speed 6.13-8.10 optional. ▼ Rear only: Front 6.00/16. * Complete Vehicle with pick-up type body. ¶ Lockheed type front and Timken dual primary rear brakes. § Auxiliary Transmission Own CU.

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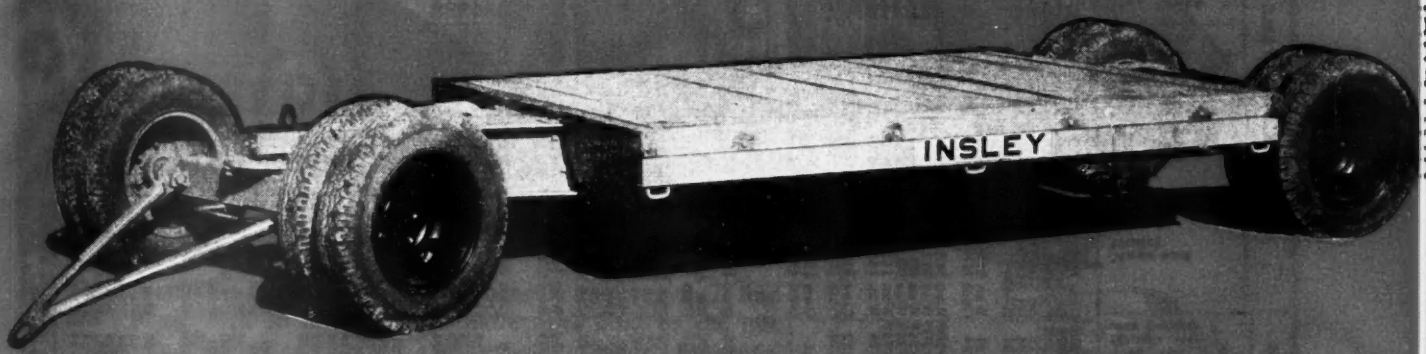

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Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number, Diameter and Length	Governor Standard	TRANSMISSION Make and Model	TRANSMISSION Forward Sp'ds	REAR AXLE Make and Model	REAR AXLE Gear and Type	REAR AXLE Drive & Torque	REAR AXLE Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operation	BRAKES SERVICE Lining Area	BRAKES SERVICE Drum Area	BRAKES SERVICE Drum Material	BRAKES Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	FRAME Type
	Oshkosh, con't.																														
1	(D).....W-906	.....	158	181	38000	▲15600	12.00/20D	14.00/20S	Cum HB600	6–4⅞x6	672	...	500	150–1800	7–4½x16	Y	Fu 4A86	12	Own W906	2F	H	** –6.2	Own W906	LT4IWS	645	975	G	TX	90	12½x3½x¾	TF
2	.....W2200	.....	160	181	40000	▲16500	13.00/20D	14.00/20S	Bu MO779	6–5¼x6	779	...	575	188–2100	7–3¾x17	Y	Fu 4A86	12	Own W2200	2F	H	** –6.15	Own 2200	LT4IA	645	975	G	TX	90	10¼x3½x¾	LF
3	.....W2201	.....	160	181	40000	▲16500	13.00/20D	14.00/20S	Bu MO893	6–5⅝x6	893	...	670	200–1800	7–3¾x17	Y	Fu 4A86	12	Own W2201	2F	H	** –6.15	Own 2201	LT4IA	645	975	G	TX	90	10¼x3½x¾	TF
4	(D).....W2204	.....	160	181	46000	▲18500	13.00/20D	14.00/24	Bu 6DC844	6–5½x6½	844	...	605	180–1800	7–3¾x17	Y	Fu 4A86	12	Own W2204	2F	H	** –6.4	Own 2204	LT4IA	780	1190	G	TX	90	10¼x3½x¾	TF
5	.....W2205	.....	160	181	54000	▲19500	13.00/20D	14.00/24	Bu 6DC8844	6–5¼x6½	844	...	740	240–2100	7–3¾x17	Y	Fu5A920	10	Own W2205	2F	H	** –6.3	Own W2205	LT4IA	780	1190	G	TX	90	10½x3½x¾	LF
6	.....W2206	.....	160	181	54000	▲19000	13.00/24D	14.00/24	H8400	6–5¾x7	■	5.7	930	295–2000	7–3¼x14⅛	Y	Fu5A1120	10	Own W2206	2F	H	** –6.3	Own W2206	LT4IA	780	1190	G	TX	90	10½x3½	LF
7	Sterling....DD115	.....	160	178	32000	11500	10.00/20	11.00/24	Wau 6SRKR	6–4½x5½	517	5.5	368	125–2250	7–3x13¾	Y	Fu 5A62▼	10	Tim 1357W	2F	H	6.52–8.6	Tim F3110W	Ws4IA	644	98₂	A	TX	76	9x3¼x¼	A
8	(D)....DD145H	.....	167	185	36000	13900	11.00/20	12.00/24	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B86▼	10	Tim 1758W	2F	H	7.33–10.3	Tim F409CW	Ws4IA	644	984	A	TX	77	9¼x3⅝x¾	A
9	Walter(e.f.)....FN	.....	126	150	20000	7500	9.00/20D	10.00/20S	Wau MZA	6–4¼x4¾	404	5.6	290	125–2600	7–2⅝x12½	Y	Own FN	6	Own FNB	2	H	6.0–8.0	Own FN	O4IA	470	670	G	FI	84	7x2¾x¼	C
10	(e.f.)..FZM	.....	126	150	24000	8500	10.00/20D	12.00/20S	Wau MZA	6–4¼x4¾	404	5.6	290	125–2600	7–2⅝x12½	Y	Own FN	6	Own FMB	2	H	6.0–8.0	Own FJ	O4IA	470	670	G	FI	84	12x3½x½	B
11	(e.f.)..FCK	.....	126	138	30000	10500	10.00/24D	11.00/24S	Wau 8RKR	6–4⅝x5½	517	5.5	365	125–2200	7–3x13⅞	Y	Own FC	6	Own FCB	2	H	7.5–9.0	Own FC	O4IA	585	890	D	FI	84	13x3¾x½	B
12	(e.f.)....FC	.....	138	162	32000	11000	11.00/24D	12.00/24S	Wau 8RKR	6–4⅝x5½	517	5.5	365	125–2200	7–3x13¾	Y	Own FC	6	Own FCB	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	96	14x3¾x½	B
13	(e.f.)..FGB	.....	126	162	32000	12000	11.00/24D	12.00/24S	Wau 145GK	6–5¼x6	779	5.7	580	185–2000	7–3½x17¾	Y	Own FA	6	Own FCB	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	84	14x3¾x½	B
14	(e.f.)..FGR	.....	126	162	42000	13000	12.00/24D	12.00/24	Wau 145GK	6–5¼x6	779	5.7	580	185–2000	7–3½x17¾	Y	Own FA	6	Own FCR	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	89	14x3¾x½	B
15	Ward La Fr..FD1	.....	.....	.....	35000	▲11500	11.00/22	11.00/22	Cont 6513	6–4½x5¾	513	5.9	405	180–2800	.....	.....	Ful 5A620	5	Tim R462W	.....	.....	** –8.15	Tim F3100W	BW4IA	.....	.....	Co	.....	.....	10x3x⅄	....
16	(D).....FD2	.....	.....	.....	35000	▲12000	11.00/24	11.00/24	Cum HB600	6–5½x6	672	17.	500	150–1800	.....	.....	Ful 5A920	5	Tim R462W	.....	.....	** –8.15	Tim F3100W	BW4IA	.....	.....	Co	.....	.....	10x3x⅄	....
17	Willys Jp...CJ-2A	1220*	80	80	3500	•2169	6.00/16	7.00/15	Own CJ-2A	4–3¼x4⅛	134	6.5	105	60–4000	3–2.33x5.48	N	WG T90C	‡6	Spi 41-2	Hy½	H	** –5.38	Spi 25	B41H	118	198	a	F		1x1½x⅄	P
18	.....4WD	1725*	118	118	5300	•2920	7.00/16	.....	Own 4WD	4–3½x4⅜	134	6.5	105	60–4000	3–2.33x5.48	Y	WGT90A	‡6	Tm1 5540NX3	S½	H	** –5.38	Spi 25	B41H	176	276	a	2I	42.28	5½x2x⅄	TD
	Six-Wheelers Wheels ▼ Driven																														
19	Dodge.....	.....	154	190	34000	.....	9.00/20	10.00/20	Own BIVX	6–3¾x5	331	6.5	270	128–3000	7–3x11.2	Y	NP 88450	5	Tim SBD1555	HyF	..	6.8 –7.8	T-35020NX9	O6IA	727	1056	C	TX	84	10x3x¼	CP
20	Duplex....TH6	.....	162	220	30000	9180	8.25/20	9.00/20	Her JXD	6–4x4½	320	6.2	240	113–3000	7–2½x10‡‡	Y	Fu 5B33△	10	Tim SBD1055	BF	L	**–6.16	Tim 32502H	L6IHV	513	839	A	TX	83¼	9½x3½x⅄	L
21	(D).....L6	.....	172	208	45000	15000	11.00/20	12.00/20	Cum HB600	6–4⅞x6	672	17.	495	150–1800	7–4½x16½	Y	Fu 5A920	5	Tim SD454	SF2	L	6.8–8.15	Tim 26450	Ws6IA	1137	1625	A	TX	77½	10½x3½x⅄	L
22	Federal....663MA	.....	189	225	.....	14500	10.00/20	10.00/22	Con R6602	6–4⅞x5⅜	602	...	464	200–2600	7–3¼x14½	Y	Fu 5A65▼	15	T SW3012P	WF	R	** –6.16	Tim 36000TW	Ws6IA	1082	1569	a	TD	108	10½x3½x⅄	T
23	.....664MAB	.....	189	225	.....	15850	11.00/22	12.00/20	Con R6602	6–4⅞x5⅜	602	...	464	200–2600	7–3¼x14½	Y	Spi 7741▼	12	Tim SW456P	WF	R	** –7.6	Tim 27452W	Ws6IA	1308	1888	a	TD	108	10½x3½x⅄	T
24	.....664MA	.....	189	225	.....	1o950	11.00/22	12.00/20	Con R6602	6–4⅞x5⅜	602	...	464	200–2600	7–3¼x14½	Y	Spi 7741▼	12	Tim SD462P	BR	R	** –8.15	Tim 27452W	Ws6IA	1092	1624	a	TD	108	10½x3½x⅄	T
25	.....629M	.....	163	199	.....	8600	8.25/20	9.00/20	Her JXDF	6–4x4¼	320	...	250	112–2800	7–2½x10‡‡	Y	Cla 205V‡‡	10	TSBD1055dph	SF	R	7.53 10.35	Tim 32514H	LT61HV	544	914	a	TX	84	9⅄x3½x¼	TL
26	.....629ML	.....	163	199	.....	8635	8.25/20	9.00/20	Her JXLDF	6–4x4½	339	...	272	126–2800	7–2½x10‡‡	Y	Cla 205V‡‡	10	TSBD1055dph	SF	R	7.53 10.35	Tim 32514H	LT61HV	544	914	a	TX	84	9⅄x3½x¼	T
27	.....635M	.....	167	203	.....	10400	9.00/20	9.00/20	Con T6371F	6–4½x4½	371	...	290	133–2600	7–2½x13½	Y	Cla 270VO△	10	TSBD1555dph	SF	R	8.33 11.47	Tim 35011H	LT61HV	752	1132	a	TX	84‡	10½x3½x⅄	T
28	.....645M	.....	167	215	.....	12325	10.00/22	10.00/22	Con T6427F	6–4⅄x4⅞	427	...	342	155–2600	7–2⅝x13½	Y	Cla 270VO△	5°	T-SD3010P	BR	R	** –9.16	Tim 35011TW	Ws6IA	1073	1550	a	TD	84½	10½x3½x⅄	T
29	F.W.D.....M6x6	.....	Opt	Opt	58000	▲21400	11.00/24D	11.00/24	Wau 145GK	6–5¼x6	779	6.2	585	186–2000	7–3½x17¾	Y	Own M	10	Wis SD462	2F	L	** –10.6	Wis F409	Ws6IA	1080	1680	a	T6	120	10⅄x3x‡‡	P
30	(D)....M6X6D	.....	Opt	Opt	58000	▲21600	11.00/24D	11.00/24	Bu DC844	6–5¼x6½	844	...	605	180–1800	7–3½x17	Y	Own M	10	Wis SD462	2F	L	** –10.6	Wis F409	Ws6IA	1080	1680	a	T6	120	10⅄x3x‡‡	P
	International (2)																														
31	.....KB-6F.4R	3300	151	194	24000	7010	7.50/20D	8.25/20	Own BLD250	6–3⅞x4½	251	6.3	200	100–3200	4–2⅝x5‡‡	N	Own F51	5	Own RF1450	SF	H	6.16–6.66	Own F470	LH61HV	495	869	c	PX	77	8⅄x⅄x⅄	T
32	.....KB-8F.4R	4950	161	215	30000	8670	8.25/20D	9.00/20	Own RED361	6–4½x4½	361	6.3	282	126–3000	7–3¼x10‡‡	Y	Own F52	5	Own RF1560	SF	H	6.50–7.16	Own F550	LH61HV	644	1105	c	PX	84	9½x3⅄x¾	C
33	.....KB-11F.4R	7425	161	215	41000	10830	9.00/20D	10.00/20	Own RED450	6–4⅝x5	451	6.3	360	148–2600	7–3¼x10‡‡	Y	Own F54	5	Own RF1670	SF	H	** –7.16	Own F760	LH61HV	738	1179	G	PX	84	10x3⅄x⅜	T
34	.....W4064L	12925	203	239	40000	15750	10.00/22	11.00/22	Cum HB600	6–4⅞x6	672	17.	492	150–1800	7–4½x....	Y	Spi 7741	4	Tim SW3012	WF	L	4.71–6.16	Own 82F	BW61A	876	....	....	PX	108	10x3½x⅄	C
35	.....W4564OH	13750	188	242	45000	16635	10.00/22	11.00/22	Cum HB600	6–4⅞x6	672	17.	492	150–1800	7–4½x....	Y	Spi 7741	4	Tim SW456	WF	H	6.00–7.6	Own 83F	BW61A	1020	....	....	PX	90	10x3½x⅄	L
36	.....W6564OH	15700	206	302	65000	19895	11.00/24	12.00/24	Cum HB600	6–4⅞x6	672	17.	492	150–1800	7–4½x....	Y	Spi 7741	4	Tim SD466	2F	H	8.15–11.66	Own 82F	BW61A	....	....	....	PX	108	10x3½x⅄	L
	Kenworth																														
37	.....(D).....522	.....	187	245	43000	12900	10 00/20	11.00/22	Cum HB6	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	BL 8241	4	Tim U200P&†	.....	.....	.....	Tim 36000TW	Ws41A	1135	....	....	....	....	9	9½x3½x⅄	....
38	.....(D)523.4R	.....	193	241	41000	14600	10.00/20	11.00/22	Cum HB6	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	BL 8241	4	Tl SW3012PA	WF	R	** –6.16	Tim 36000	Ws4rIA	924	1248	a	TD	102	9½x3⅄x⅄	C
39	.....(D)524.4R	.....	193	241	54000	15100	10.00/20	11.00/22	Cum HB6	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	BL 8241	4	Tim SW456	WF	R	6.0 –7.6	Tim 36000	Ws4rIA	819	1192	a	TD	102	9½x3⅄x⅄	C
40	.....528.4R	.....	186	234	40000	12500	10.00/20	10.00/22	Bud L0525	6–4½x5½	525	5.5	385	150–2200	7–3x11½	Y	Fu 5A620	5	Tl SW3012PA	WF	R	** –6.16	Tim 35100	Ws4rIA	924	1248	a	TD	102	9½x3⅄x⅄	C
41	.....(D)548.4R	.....	193	241	54000	17000	11.00/22	12.00/24	Cum HB6	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	BL 8241	4	Tim SD462	DR	R	** –8.15	Tim 36000	Ws4rIA	819	1192	a	TD	109	9½x3⅄x⅄	dbC
42	.....(D)552.4R	.....	255	255	54000	20700	13.00/24	13.00/24	Cum HB6	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	BL 8241	4	Tim SD462W	WF	R	** –8.15	Tim F3200W	Ws4rIA	1109	1192	a	TD	168	9½x3⅄x⅄	dbC
43	(D).....825	.....	193	241	42000	14900	10.00/20	11.00/22	Cum HB6	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	BL 8241	4	TGSW458P	WF	R	6.0–7.6	Tim 36000	Ws4rIA	1016	....	a	TD	102	9½x3⅄x⅄	C
44	829	.....	186	234	42000	14650	10.00/20	11.00/22	Bud LO525	6–4½x5½	525	5.5	385	150–2200	7–3x11½	Y	Fu5A620	5	TSD3010P	DR	R	–8.27	Tim 36000	Ws4rIA	924	....	a	TD	104	9½x3⅄x⅄	....
	Marmon-Herr.																														
45	(C).....R5-6	.....	156	....	22500	▲6673	7.50/20D	7.50/20	Ford	8–3⅄x3¼	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Timken	S	H	** –6.67	Own M5	M	503	....	a	F	82△	7½x3x¼	C
46	(C).....R6-6	.....	180	....	22500	▲6710	7.50/20D	7.50/20	Ford	8–3⅄x3¼	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Timken	S	H	** –6.67	Own M5	M	503	....	a	F	106¼	7½x3x¼	C
47	.....MH440-6	.....	182	....	34000	▲10600	9.00/20	10.00/20	Her WXLC3	6–4¼x4¼	404	5.4	239	118–2800	7–2⅝x13¼	Y	Fu 5A430	5	Own 1123	2B	H	** –8.43	Own 121	Ws..A	876	....	C	F	96	9½x3⅄x¼	T
48	.....MH-555-6	.....	182	....	42000	▲14900	11.00/20	11.00/20	Her RXC	6–4⅝x5¼	529	6.3	390	131–2200	7–3x13¼	Y	Fu 5A620	5	Own 1124	2B	H	** –8.15	Own 122	Ws..A	1092	1608	..	F	93	10⅄x3x⅄	T
49	(C)...R5-COE6	.....	156	180	22500	.....	7.50 /20D	7.50 /20	Ford	8–3⅄x3½	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Ford	A	H	6.67	Own	F...H	303	563	A	F	....	7.08x2.8x½	T
50	(C).....Q-5-6	.....	160	....	35000	▲9550	9.00 /20	10.00 /20	Ford	8–3½x4⅜	337	6.4	255	145–3600	3	..	Ford	5	Ford	....	H	** –6.80	Own	F...H	350	583	..	F	85	9x3x¼	T
51	(C).....Q-6-6	.....	184	....	35000	▲9700	9.00 /20	10.00 /20	Ford	8–3½x4⅜	337	6.4	255	145–3600	3	..	Ford	5	Ford	....	H	** –6.80	Own	F...H	350	583	..	F	109	9x3x¼	T
	Oshkosh																														
52	.....W703-6X6	.....	Opt	Opt	47000	16950	11.00/20D	12.00/20	Her RXLD	6–4¼x5¼	558	5.4	430	150–2200	7–3½x13¼	Y	Fu 5A650	12	Tim SD454W	2F	H	** –6.31	Own-Tim	L6IH	1080	1625	G	TX	Opt	10¼ 3½	⅝B
53	(D)...W1600BD	.....	245	Opt	60000	22770	11.00/24D	12.00/24	Bu 6DC844	6–5¼x6½	844	....	600	180–1800	7–3¾x17	Y	Fu 4B86	12	Tim SD462	2F	H	** –6.14	Own-Tim	LT61A	1080	1625	G	TX	160	12¾–3¼	⅝B
54	(D)‖W1600BDH	.....	267	Opt	60000	24300▲	11.00/24D	12.00/24	Bu 6DC844	6–5¼x6½	844	....	600	180–1800	7–3¾x17	Y	Fu 4B86	12	Tim SD462	2F	H	–9 .82	Own-Tim	LT61A	1080	1625	G	TX	174	12¾–3¼	⅝B
55	(D)‖W1602BDH	.....	272	Opt	95000	29300	14.00/24D	14.00/24	Bu 6DC844	6–5¼x6½	844	....	600	180–1800	7–3¾x17	Y	Fu 4B86	12	Tim SD472	2F	H	–13 .9	Own-Tim	LT61A	....	2217	G	TX	177	12¾–3¼	⅝B
56	.....W1600BG	.....	245	Opt	60000	22770	11.00/24D	12.00/24	Bu MO893	6–5¾x6	893	....	625	200–1800	7–3¾x17	Y	Fu 4B86	12	Tim SD462	2F	H	–9 .82	Own-Tim	LT61A	1080	1625	G	TX	160	12¾–3¼	⅝B
57	(D)...W1600CD	.....	259	Opt	60000	23400▲	11.00/24D	12.00/24	Cum 6HBI	6–4½x6	672	....	500	150–1800	7–4½x16	Y	Fu 4B86	12	Tim SD462	2F	H	** –6.14	Own-Tim	LT61A	1080	1625	G	TX	174	12¾–3¼	⅝B
58	(D)..W1600CDS	.....	259	Opt	60000	23700▲	11.00/24D	12.00/24	Cum 6HBI8	6–4¾x6	672	....	635	200–1800	7–4½x16	Y	Fu 4B86	12	Tim SD462	2F	H	** –9 .82	Own-Tim	LT61A	1080	1625	G	TX	174	12¾–3¼	⅝B

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▼ Auxiliary transmission Spicer 703F with 3 forward speeds.
△ Torque divider, Timken T70–2 speed.
§ Three speed transmission—2 speed transfer case.
‡‡ Overdrive optional.
▲ Includes cab.
• Complete vehicle with pick-up type body.
■—1090 cu. in.
▽ Timken T77 2-speed Transfer Case.
‡ Includes Front, Center and Rear.
§ Hydraulic Coupling.
† Timken T13126 PA Trailing Axle.
▲ Chassis Weights on Duals
▲ Timken T76-Two speed transfer case.
* Auxiliary transmission spicer 6231B at extra cost gives 15 forward speeds.

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MODELS from 14,500 lbs. g.v.w. up to 175,000 lbs. gross combination weight. Gasoline, diesel or butane-powered

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IT'S PART OF THE LANGUAGE: *"Built Like A Mack Truck"*

(Turn to Page 120, please)

SILENT HOIST & CRANE CO.
Pioneer Mfrs. of Equipment For Public Utilities

KRANE KAR Swing Boom Mobile Crane: for materials-handling . . . lifting, transporting, positioning, gasoline or Diesel, 1½, 2½, 5 and 10 ton capacities, 9 to 37 ft. booms (or telescopic booms), solid or pneumatic tires. Self-stabilizing without jacks or outriggers; unobstructed vision; fast, flexible, safe, easy to operate.

WINCHES: Capstans; Single and Double Drum, Jaw Clutch, Keyed and Friction Clutch Winches. 2,000 to 50,000 lb. Capacities.

SWING BOOM CRANES: Truck: Motor Power Operated; high capacity; takes up only a small space. For handling transformers, cable reels, lamp posts, trees, poles, manhole castings, etc. 9 to 31 ft. booms; one to 10 ton capacities.

TOWERS: 2 or 3 section type and Pantograph types, with plain, revolving or racking platforms.

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THE ORIGINAL SWING BOOM MOBILE CRANE WITH FRONT-WHEEL DRIVE AND REAR-WHEEL STEER

½ TO 5 AND 10 TON CAPACITIES

KRANE KAR

TRADE MARK REGISTERED

SILENT HOIST & CRANE CO.

852 63rd ST., BROOKLYN 20, NEW YORK

(Continued from Page 118)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE: Minimum Standard	WHEEL-BASE: Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES: Standard Front and Rear	TIRE SIZES: D-dual rear S-single rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinder, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Number, Diameter and Length Main Bearings	Governor Standard	TRANSMISSION: Make and Model	Forward Sp'ds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES: SERVICE: Make Location Type Operation	Lined Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
	Oshk. Sh Cont'd.																															
1 (D)	°°W1600CDH		265	Opt	60000	24000◻	11.00/24	D	12.00/24	Cum 6HBI	6–4½x6	672	. . .	500	150–1800	7–4½x16	Y	Fu 4B386	12	Tim SD462	2F	H	** –9.82	Own-Tim	LT61A	1080	1025 G	502	835	°	TX	172	12½–3⅜–¾	B
2 (D)	°°W1600CDSH		267	Opt	60000	24300◻	11.00/24	D	12.00/24	Cum 6HBIS	6–4½x6	672	. . .	635	200–1800	7–4½x16	Y	Fu 4B386	12	Tim SD462	2F	H	** –6.14	Own-Tim	LT61A	1080	1025 G	502	835	°	TX	174	12½–3⅜–¾	B
3	Peterbilt(D)	350DT	189	Opt	43000	10250	10.00/20	D	11.00/22	Cum HB600	6–4⅛x6	672	17	500	150–1800	7–4½x16½	Y	Spl 8041	12	Tim SW3012W	WF	A	6.00– 8.5	T-36000W	W861A	1212	1734 a	FD	106½	10½x3⅜x⅝	B	TL
4	(D)	360DT	187	Opt	51000	17300	10.00/20	D	11.00/22	Cum HB600	6–4⅛x6	672	17	500	150–1800	7–4½x16½	Y	Spl 8041	12	Tim SW456W	WF	A	6.00–10.2	T-36000W	W861A	1450	1626 a	FD	106½	10½x3⅜x⅝	B	TL
5	(D)	370DT	187	Opt	56000	17450	10.00/20	D	11.00/22	Cum HB600	6–4⅛x6	672	17	500	150–1800	7–4½x16½	Y	Spl 8041	12	Tim SW456W	WF	A	6.00–10.2	T-27463	W861A	1430	1626 a	FD	106½	10½x3⅜x⅝	B	TL
6	(D)	380DT	187	Opt	56000	17900	10.00/20	D	11.00/22	Cum HB600	6–4⅛x6	672	17	500	150–1800	7–4½x16½	Y	Spl 8041	12	Tim SD462W	2F	A	** –8.15	T 27463	W861A	1000	1626 a	FD	106½	10½x3⅜x⅝	B	TL
7	Reo	D–236, 4R	169	200	47000	13060◆	10.00/20		10.00/20	Con T–6427	6–4¼x4¾	4276	2.33	615	153–2900	7–2⅛x13.6	Y	Cla270V-VO	15	Tim SD3010	SF2	T	7.5	Tim 36000	W441A	1082	1570 var	TD	104	9½x3 ⅛ x ⅜	TP		
8	. . . .	D–316, 4R	186	248	56000	16000◆	10.00/20		10.00/20	Con R–6602	6–4⅜x5½	6025	5.94	1464	203–2800	7–3⅛x14.7	Y	Spl6252A-53‡	15	Tim SD454	SF2	T	7.33–8.15	Tim 36000	W441A	1230	1778 var	TD	108	10½x3 ⅜x ⅜	TP		
	Sterling																															
9	. . . .	HB8130	164	183	32000	11000	8.25/20		10.00/20	Wau 6MZA	6–4⅛x4½	1015	6.2	290	130–3000	7–2⅝x8½	Y	Fu 5A43	5	T–SBP1555PH	2F	L	6.80–13.14	T–35011H	W861A	502	835	°	TX	82¼	7.08x2.88x¼	TL▼		
10	. . . .	HD8140	164	183	36000	11800	9.00/20		10.00/20	Wau 6MZA	6–4⅛x4½	1015	6.2	290	130–3000	7–2⅝x8½	Y	Fu 5A43	5	T–SP3010PA	WF	L	6.40–10.50	T–35011TW	W861A	1074	1564 A	TX	83	9x3 ⅛x ¼	A		
11	. . . .	HW8160	164	183	42000	12800	10.00/20		11.00/22●	Wau 6BKKR	6–4⅜x5⅜	1710	6.5	380	127–2100	7–3x11⅞	Y	Fu 4B86	4	T–SW 456P	WF	L	5.67–8.20	T–27454W	W861A	1308	1892 A	TX	92	9¼x3 ⅜x ⅜	A		
12	. . . .	HW8235	182	193	52000	15700	11.00/22		11.00/22	Wau 6BKK	6–4⅜x6	2100	6.5	500	150–1800	7–4x16½	Y	Fu 4B86	4	T–SW3012PA	WF	L	4.71–6.67	T–36000TW	W861A	1082	1574 A	TX	92	9x3 ⅛x ⅜	A		
13	(D) . . .	HW8160H	182	193	42000	14650	10.00/20		11.00/22	Cum HB600	6–4⅛x6	672	17	500	150–1800	7–4x16½	Y	Fu 4B86	4	T–SW 456P	WF	L	5.66–8.20	T–27454W	W861A	1308	1892 A	TX	92	9¼x3 ⅜x ⅜	A		
14	(D) . . .	HW8235H	182	193	52000	15300	11.00/20		11.00/22	Cum HB600	6–4⅛x6	672	17	500	150–1800	7–4x16½	Y	Fu5A62–22N	15	Own 195W	CD	R	6.04–7.31	T–36000TW	W861A	1082	1802 A	TX	83	9x3 ⅛x ⅜	A		
15	. . . .	HS8195	182	193	45000	15300	10.00/20		11.00/22	Wau 140GK	6–5x5½	5256	6.12	1142	142–2200	7–3⅝x13⅜	Y	Fu5A62–3A92	15	Own 195W	CD	R	6.04–7.31	T–36000TW	W861A	1082	1802 A	TX	83	9x3 ⅛x ⅜	A		
16	. . . .	HS8265	193	193	60000	17750	11.00/20		12.00/24	Wau 145GK	6–5½x6	7796	6.2	585	180–2100	7–3⅝x13⅞	Y	Fu 4B86	4	Own 265W	CD	R	9.21–13.16	T–27454W	W861A	10	70	1912 A	JX	92	9¼x3 ⅜x ⅜	A		
17	. . . .	HS8297	182	193	70000	20750	12.00/24◆		13.00/24◆	Wau 145GK	6–5½x6	7796	6.2	585	180–2100	7–3⅝x13⅞	Y	Fu 4B86	4	Own 330W	CD	R	9.21–13.16	T–27454W	W861A	1280	1988 A	JX	92	9¼x3 ⅜x ⅜	A		
18	. . . .	HS8330	174	187	80000	23150	12.00/24		14.00/24◆	Wau 145GK	6–5½x6	7796	6.2	585	180–2100	7–3⅝x13⅞	Y	Fu 4B86	4	Own 330W	CD	R	9.21–13.16	T–27454W	W861A	1280	1988 A	JX	91	12x3 ½x ⅝	AL		
19	(D) . . .	HC8195H	182	193	45000	16000	10.00/20		11.00/22	Cum HB600	6–5⅜x6	672	17	500	150–1800	7–4⅛x16½	Y	Fu4B86–3A92	12	Own 195W	CD	R	6.04–7.31	T–36000TW	W861A	1082	1802 A	TX	92	9¼x3 ⅜x ⅜	A		
20	(D) . . .	HC8265H	182	193	60000	18100	11.00/20		12.00/24	Cum HBD600	6–5⅜x6	672	17	500	150–1800	7–4⅛x16½	Y	Fu 4B86◆	4	Own 265W	CD	R	9.21–13.16	T–27454W	W861A	1160	1912 A	JX	92	9¼x3 ⅜x ⅜	A		
21	(D) . . .	HC8297H	182	193	70000	21050	12.00/24◆		13.00/24◆	Cum HBD600	6–5⅜x6	672	17	500	150–1800	7–4⅛x16½	Y	Fu 4B86◆	4	Own 330W	CD	R	9.21–13.16	T–27454W	W861A	1280	1988 A	JX	92	9¼x3 ⅜x ⅜	A		
22	(D) . . .	HC8330H	174	187	80000	23450	12.00/24		14.00/24◆	Cum HBD600	6–5⅜x6	672	17	500	150–1800	7–4⅛x16½	Y	Fu 4B86◆	4	Own 330W	CD	R	9.21–13.16	T–27454W	W861A	1280	1988 A	JX	91	12x3 ½x ⅝	AL		
	Truckstell																															
23	(C) . . .	F2X28	2F	156	237	28000	6468	7.50/20◆		8.25/20–10	Ford	8–3⅝x3¾	2396	6.8	180	100–3800	3–2.49x4.9	N	Ford	4	Ford■■	6F	H	5.83–8.11	Ford	F61HV	502	835	°	TX	82¼	7.08x2.88x¼	TL▼		
24	(C)	F2X20–40(cow)	2F	134	224	25500	7083	7.50/20◆		8.25/20–10	Ford	8–3⅝x3¾	2396	6.8	180	100–3800	3–2.49x4.9	N	Ford	4	Ford■■	6F	H	5.83–8.11	Ford	F61HV	560	935	°	TX	82½	7.08x2.88x¼	TL▼		
25	(C)	F2X28–7	2F	156	250	28000	7897	7.50/20◆		8.25/20–10	Ford	8–3⅝x3¾	3376	4.25	145	145–3000	3–2.87x5.0	Y	Ford	5	Ford	Hy	H	6.8	Ford	F61HV	560	935	°	TX	82½	9⅜x3⅜x¼	TL▼		
26	(C)	F2X34–7	2F	156	250	34000	8100	8.25/20†		9.00/20–10	Ford	8–3⅝x3¾	3376	4.25	145	145–3000	3–2.87x5.0	Y	Ford	5	Ford■■	SF	H	6.5	Ford	F61HV	695	1081	°	TX	82½	9⅜x3⅜x¼	TL▼		
27	(C)	F2X34–8	2F	156	250	34000	8701	9.00/20†‡		9.00/20–10‡	Ford	8–3⅝x3¾	3376	4.25	145	145–3000	3–2.87x5.0	Y	Ford	5	Ford■■	SF	H	6.5	Ford	F61HV	835	1232	°	TX	82½	9⅜x3⅜x¼	TL▼		
28	(C)	F2X40	2F	156	250	40000	9300	9.00/20		10.0/20–10	Ford	8–3⅝x3¾	3376	4.25	145	145–3000	3–2.87x5.0	Y	Ford	5	Ford■■	SF	H	6.5	–8.87	Ford	F61HV	835	1232	°	TX	82½	9⅜x3⅜x¼	TL▼		
29	(C) . . .	C2X28	2F	157	247	28000	6629	7.50/20D		8.25/20–10	Chev.	6–3½x3⅛	2356	6.6	192	93–3100	4	Std.Chev	Y	Chev.	4	Chev.▽	HyF	H	6.17	Chev.	C61HV	530	808	°	21	82¾	8⅝x2⅞x¼	CT▼		
30	(C)	C2X20–40(cow)	2F	130	224	29000	7204	7.50/20D		8.25/20–10	Chev.	6–3½x3⅛	2356	6.6	192	93–3100	4	Std.Chev	Y	Chev.	4	Chev.▽	HyF	H	6.17	Chev.	C61HV	530	808	°	21	82¾	8⅝x2⅞x¼	CT▼		

▲ Includes Cab.
◆ Front only: Rear 9.00/20.
† Two speed axle with auxiliary trans.
‡ Rear 10.00/22.
§ 8031-F2 Spicer Auxiliary Transmission Available.
‡‡ Auxiliary transmission, Spicer 8031.
◆◆ Two speed axle with auxiliary trans.
° Front only: Rear 10.00/20.
†† Front only: Rear 11.00/22.
‡‡ When 11.00/22 tires are required it is necessary to furnish 52 inch axle spacing.
▽ Two speed axle available—6.13–8.10.
■■ Including all-purpose reinforcing frame channels.
°° Hydraulic Coupling.
◻ Chassis weights on duals Front, Center and Rear.
° Composite Cast Alloy Iron.
§ Cast Alloy Iron.
♦ 6231 Spicer Auxiliary Transmission.

The best part of repair work is *Monmouth*

THE Monmouth line of front end parts is complete for all popular makes and models of passenger cars and trucks. Illustrative of the outstanding quality of this line are Monmouth King Bolt Sets.

These bolts are first forged, then hardened and finally ground to exact dimensions after hardening to insure uniform straightness, easy time and cost saving installation. Eye comparison with king bolts produced to sell at a price will quickly demonstrate the greatly superior quality and cost saving features of Monmouth. This extra quality is typical of all Monmouth Front End Parts, such as tie rods, drag links, tie rod ends, coil springs and other independent front wheel suspension parts.

The Monmouth parts catalog is indexed in a way that wanted parts for any car or truck can be quickly found and ordered by telephone from your nearest NAPA Jobber. His balanced stock insures the quickest possible service. Save time and money, insure customer satisfaction with Monmouth Parts. There's no part like Monmouth—the best part.

NAPA Assurance of Quality

Your NAPA Jobber is a Good Man to Know!

MONMOUTH PRODUCTS COMPANY, Cleveland 3, Ohio

FOR ENGINE BEARINGS
CLUTCH PLATES AND PARTS
CHASSIS PARTS

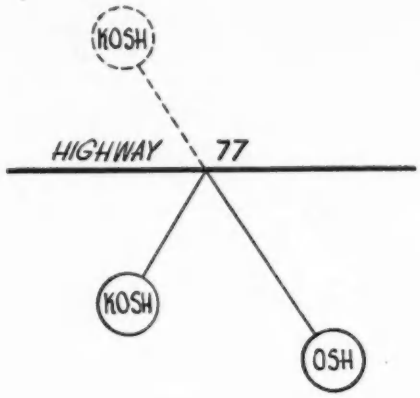
Monmouth Trade Mark *is the name*

Solutions to Time Out for Play

(See Page 34)

Without Detours

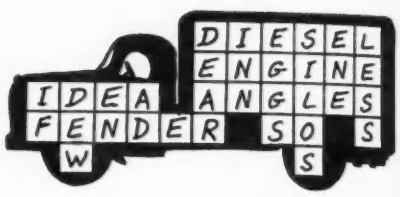
The distance from any point on the highway to Kosh would be the same if Kosh were located in the same position north of the highway instead of south. If we assume such a position for Kosh, we can of course draw a straight line (the shortest distance between two points) between Osh and Kosh north. Where this straight line intersects the highway is the most economical point from which to build the roads, for the distance from that point to Kosh south is the same as the distance from that point on the straight line to the hypothetical Kosh north. Of course, the same results may be obtained by working with a hypothetical Osh north.



Without Algebra

Answer: $110. Explanation: If $130 equals what he really made plus $2 less than one-fifth of what he really made, then what he really made plus one-fifth equals $130 plus $2, or six-fifths of what he really made equals $132. If six-fifths of what he really made equals $132, then one-fifth equals $22 and five-fifths, or what he really made, equals $110.

Truckword Puzzle



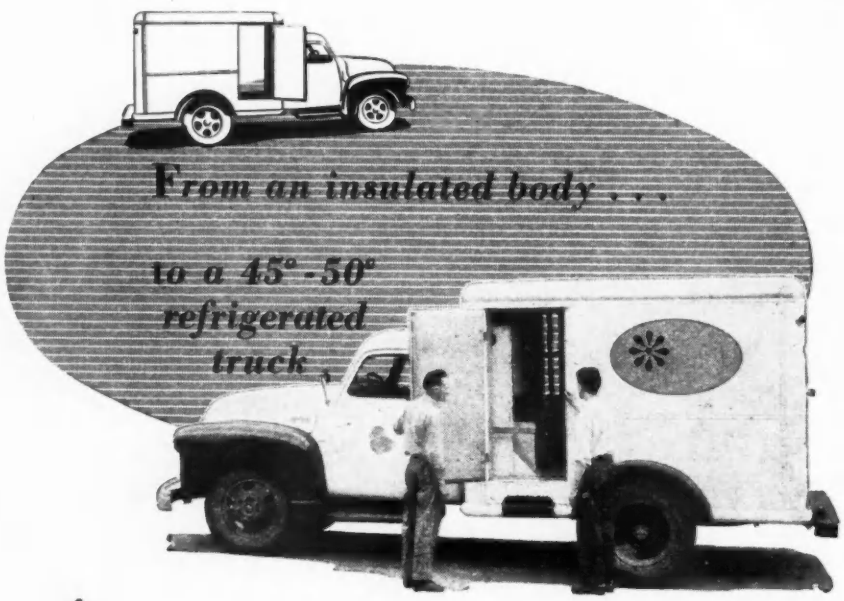
The Tool Buyers

Answer: Mike worked with Tom, and Ike worked with Jerry.

Proof: If each man bought as many tools as he paid dollars for each tool, then the number of dollars each man spent is a number multiplied by itself. Since each man bought less than 10 tools, then what he spent must be 1 x 1, 2 x 2, 3 x 3, 4 x 4, 5 x 5, 6 x 6, 7 x 7, 8 x 8, or 9 x 9, or $1, $4, $9, $16, $25, $36, $49, $64 or $81. We are told, however, that each man bought a different number of tools and that each mechanic spent $45 more than his helper. This means that in the amounts given above we must find two numbers that exceed two other numbers, each by the sum of 45. The only two numbers that do this are 81 and 49, 81 exceeding 36 by 45, and 49 exceeding 4 by 45. This makes it clear that one mechanic spent $81 for 9 tools at $9 apiece and had a helper who spent $36 for 6 tools at $6 apiece, while the other mechanic spent $49 for 7 tools at $7 apiece and had a helper who spent $4 for 2 tools at $2 apiece.

Mechanic number one, 9 tools—
His helper, 6 tools.
Mechanic number two, 7 tools—
His helper, 2 tools.

Now since we know that Tom bought 1 tool more than Ike, and the only numbers yielding a difference of 1 above are 7 and 6, then we know that Tom must be mechanic number two and Ike the helper of mechanic number one, whose name, obviously enough, must therefore be Jerry, while the name of Tom's helper must be Mike.



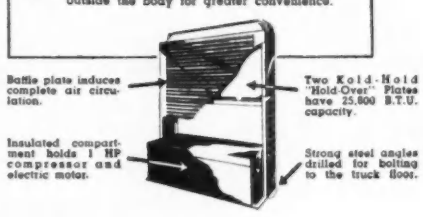
*Name on request

As simple as 1-2-3

with KOLD-HOLD'S new Pakage truck unit

Hi-temperature refrigeration of perishables is achieved quickly, easily and economically through the installation of the new "Pakage" truck unit. This unit is a completely self-contained refrigeration system which you can install (see right) in from two to three hours without special body work, holders or brackets. It works well in any properly insulated body, regardless of age and it maintains a 45° to 50° temperature throughout the longest day's deliveries. The unit recharges itself by simply plugging in to any 110V outlet. 220V motor is available if desired. Write for the "Pakage" truck unit bulletin for information.

1. Cut two holes in the floor of the truck for air intake and discharge. Dimensions and measurements come with the unit, as well as complete installation instructions.
2. Push the unit into position over the holes and bolt securely into place. This is all the installation required.
3. Plug into 110V outlet. Twenty foot rubber covered cord is supplied with the unit. If desired, a connection box may be installed outside the body for greater convenience.


Baffle plate induces complete air circulation.
Insulated compartment holds 1 HP compressor and electric motor.
Two Kold-Hold "Hold-Over" Plates have 25,800 B.T.U. capacity.
Strong steel angles drilled for bolting to the truck floor.

WRITE FOR THIS FREE LITERATURE!
Efficient Truck Refrigeration, "Pakage" Truck Unit, and separate bulletins on Truck Refrigeration for Meat, Milk, Ice Cream and Frozen Foods.

KOLD-HOLD
Jobbers in Principal Cities

PROCESSING TRANSPORTATION STORAGE
protects every step of the way

KOLD-HOLD MANUFACTURING CO. 620 E. Hazel St., Lansing 4, Michigan

1949 Chevrolet Truck Models Incorporate Many Refinements

THE 1949 model Chevrolet trucks which went into production Dec. 13 incorporate a number of changes and refinements, although the basic styling and design features of the 1948 Advance-Design line have been continued.

Cab mounting has been changed from three-point to a four-point suspension with twin-shackles at the rear corners. The bolts are mounted in rubber bushings while the rubber bumpers formerly used at the corners have been eliminated.

Loading heights are reduced by 3½ in. on the platform, stake, and high rack models in the 5000 and 6000 Series, and on the 4000 Series when 7.50 x 20 RPO tires are specified. Part of this gain comes from the reduction in rear spring camber—about ½ in. in the 5000, 6100, and 6400 Series; and about 1 in. for the 4100 and 4400 Series.

In the interest of improved lubrication and sealing, an improvement was made in mid-season of 1948 in the front suspension. This carries design changes in the steering knuckle thrust washers, bushings, and dust shields on forward control, c-o-e, and conventional two-ton truck models.

Although the "Thrift-Master and "Load-Master" engines remain basically the same, they incorporate some improvements reflected in the passenger car engines. For one thing compression ratios now are 6.6 to 1 and 6.7 to 1 respectively, although performance ratings remain the same. Spark plugs have been changed to 14 mm size. Both engines are fitted with a new carburetor having refinements in the accelerator pump to improve reliability. A fast idle combined with the choke simplifies cold weather operation.

Timing gear lubrication has been made more effective through pressure feed, replacing the former practice of gravity feed, thus increasing lubrication at low speeds. On the 3100 Series oil filling and level checking now is made more accessible by filling through the rocker cover and increasing the length of the dip stick, the same as on the other conventional truck models.

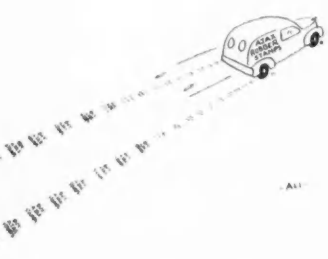
The ignition distributor has been simplified in detail and improved by the elimination of the polarity reversing switch previously mounted on the starter. The breaker plate—formerly insulated—now is internally grounded while the external stationary contact terminal is eliminated. Condenser capacity also has been reduced.

Another change made during 1948 production was the elimination of tooth chamfer on the flywheel ring gear, thus contributing to longer life.

Molded plastic caps replace rubber caps on the coil-to-distributor wire and at the distributor end of spark plug wires. These caps are more flexible, provide better sealing against moisture, and are more durable.

To eliminate possible interference with the installation of certain special bodies or accessories, the fuel tank has been relocated and is mounted at the back of the seat in all cab models of all series.

Borrowing from passenger car design, attachment of the exhaust pipe to the manifold has been changed from a clamped packing type to a flange and gasket joint. The flange is welded to the exhaust pipe and bolted to an angular flange on the exhaust manifold.



A 24 TON PAYLOAD!

***But why does this truck have* BUELL AIR HORNS?**

Heavy haulers, like Calaveras Cement Company of San Francisco, can't afford slowdowns once they start rolling. That's why air horns are a must for reaching out to clear the way. But why Buell Air Horns?

HERE'S THE REASON

All air horns *except* Buell Air Horns use a diaphragm to produce sound. Now a diaphragm must be adjusted to the pressure in your air brake system. This means you have a one volume signal; a time lag between pulling the control cord and producing a signal; and you must make periodic adjustments to keep the horns within air brake pressure range.

But Buell Air Horns use an exclusive free-floating disc to give sound. This disc responds instantly at any pressure and never needs adjustment. *No danger of "down time" due to horn failures.* And you can give a soft, polite signal with as little as three pounds of air pressure! *Keep that public goodwill truckers have worked so hard to win.*

These are the reasons why manufacturers and truckers alike specify Buell Air Horns. These are the reasons why you should Put Your Trust in Buell Air Horns.

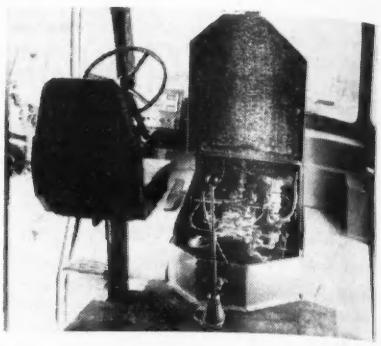
Write for descriptive literature, prices and fleet discounts.

BUELLS SPECIFIED BY GREYHOUND BUS CO. FOR 16 YEARS

BUELL MFG. CO., 913 W. 49th Place, Chicago 9, Ill.

Spangler Panel Delivery Bodies Employ Frameless Construction

THE NEW LINE of panel delivery bodies recently introduced by the D. H. Spangler Engineering and Sales Co., Hamburg, Pa., is made entirely of ⅛-in. aluminum alloy treated with protective coatings and underbody insulation, and provides a loading space of 72 in. in width, 72 in. in height, and 10½ ft. in length, from the driver's seat to the rear. (See photos, page 248, November CCJ.) Design and construction is such that the ordinary vertical and horizontal supports and framing are entirely eliminated. Rigidity is achieved by the use of large sections of aluminum riveted to full-length formed round corner sections starting at the front, running across the top and down to the rear of the body.



Interior view shows insulated engine cover in raised position for good accessibility, high-level instrument panel assembly and convenient seat location

An outstanding feature of the Spangler panel delivery is the high degree of accessibility to the engine for maintenance operations. Accessibility is achieved in two ways: Through a hinged compartment beside the driver, and the removable panel across the front of the body.

A number of driver comfort features have been engineered into the Spangler body with notable results. The steering wheel, for example, is mounted to the left of normal position. This permits the driver to back the vehicle without the use of a aear view mirror. Headroom is ample, even for men of above average height. The driver's seat is mounted at a height which enables him to slide off conveniently, instead of lifting his entire weight, pushing himself up, or employing any of the normal rising motions. All standard dash instruments are grouped in front of the steering wheel in a position that takes minimum eye motion and permits maximum aattention to road and traffic conditions. Rubber mud and snow scrapers, dual windshield wipers, left- and right-side rear view mirror, an insulated engine compartment and easy sliding doors are additional features.

While the body can be mounted on any light-duty chassis, Spangler supplies these bodies built on the Ford F3 chassis, shortened to 113-in wheelbase for greater flexibility in parking, turning and city traffic. Spangler clams that this change in length increases road traction to a degree that, except under extreme conditions, the use of anti-skid chains is eliminated. These features of unusual stability and ease of handling are achieved without impairing the vehicle's original steering geometry. The Spangler-Ford unit weighs 4690 lb, complete with spare tire and full gas tank.

Here's the right combination that pays off in better tire mileage, fewer tire failures, fewer tire replacements every time.

Avoid underinflation that eats up thousands of useable tire miles. Make sure tires are correctly inflated *at all times.* Check pressures regularly with a reliable Schrader Gauge. Then seal every valve *air-tight* with a Schrader Valve Cap, *guaranteed* to hold up to 250 lbs. pressure. Always replace worn or abused valve cores.

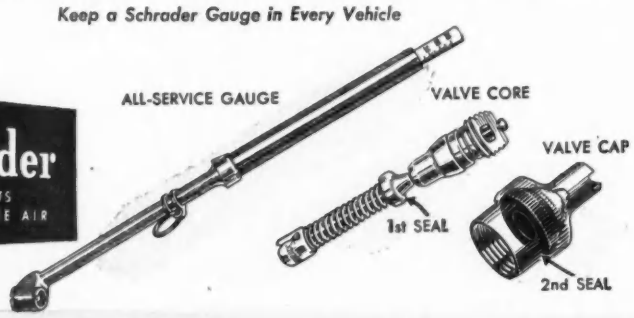
Your reward for proper tire care will be more use out of your tires, fewer roadside flats,* on-time schedules, payloads moved promptly with less time out for tire repairs and breakdowns. See your regular supplier today for the Schrader Products you need.

**Send for free booklet "How to Prevent Roadside Flats."*

SCHRADER CAPS, CORES AND GAUGES MAKE TIRES LAST LONGER!

Keep a Schrader Gauge in Every Vehicle

Schrader
PRODUCTS CONTROL THE AIR



A. SCHRADER'S SON, *Division of Scovill Manufacturing Company, Incorporated,* BROOKLYN 17, N. Y.
World's Largest Manufacturer of Tire Valves, Gauges and Accessories

Be Prepared

Policeman: "How far were you from the spot where this delivery truck struck the taxi?"

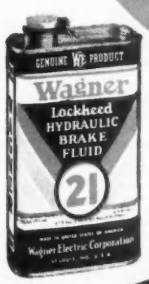
Weavin' Willie: "Thirty-two feet and nine inches."

Policeman: "How come you know the distance so exactly?"

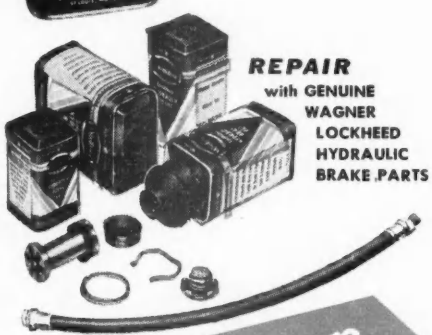
Willie: "I figured some dope would ask me, so I measured it."

For *SAFETY'S SAKE* Reline with CoMaX...

WAGNER CoMaX gives longer wear in HEAVY DUTY SERVICE



REFILL with WAGNER LOCKHEED BRAKE FLUID



REPAIR with GENUINE WAGNER LOCKHEED HYDRAULIC BRAKE PARTS

The rugged, even-wearing quality of the friction material used in CoMaX Brake Lining makes it superior for *all* your fleet requirements. On your heaviest trailer jobs . . . or lighest pick-ups . . . there is a specific CoMaX lining to give you more quick, safe, smooth stops between each relining.

Available in rolls, blocks, slabs or cut segments, CoMaX provides *complete coverage* for all your lining needs from a single dependable source. Standardize on CoMaX to assure longer wear, greater safety and less "down time" for brake service on your fleet. Order from your local Wagner wholesaler today.

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LOCKHEED HYDRAULIC BRAKE PARTS and FLUID • NoRol
CoMaX BRAKE LINING • AIR BRAKES • TACHOGRAPHS
ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES

B49-1

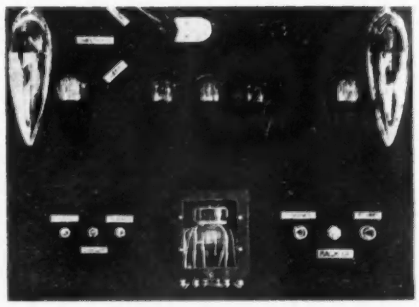
You can depend on WAGNER QUALITY because:
WAGNER PRODUCTS ARE USED AS ORIGINAL EQUIPMENT BY AUTOMOBILE MANUFACTURERS

New Products

(CONTINUED FROM PAGE 56)

P118. Safety Signal

The Hosmer Safety Signal, designed to sychronize the operation of any number of stop and warning lights up to the capacity of the battery and electrical system on any vehicle, the new three-way signal distinguishes between a standing vehicle.



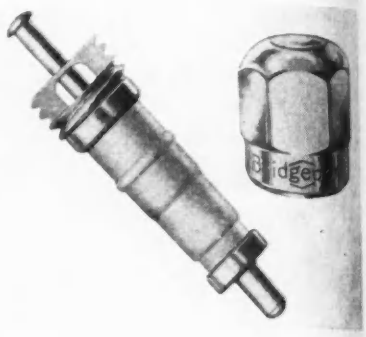
a slow moving vehicle, or a vehicle that is backing.

It synchronizes lights while the vehicle is stopping. It synchronizes flashing directional signals with flashing stop lights, thus providing a double signal.

All synchronized flashing lights on the vehicle operate at one time, by pressing a master switch, thereby protecting the vehicle and the operator by definitely indicating that it is stopped and is a hazard to all traffic. The Kilmur Corp., Kilkenny, Minn.

P119. Valve Cores

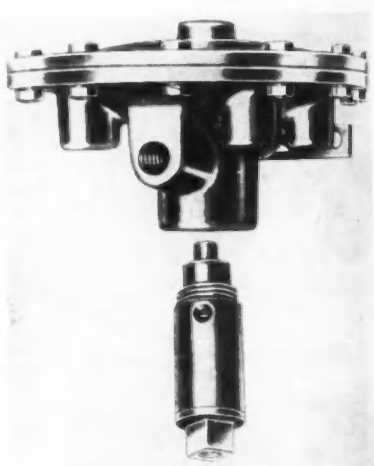
Hi-Heat valve cores and caps offer protection against high heat condition. Core has a patented lead-plated barrel in addition to a specially compounded heat-resisting gasket that



creates an air-tight seal when the valve is in a closed position. The cap contains a metallic gasket in place of the conventional rubber gasket used in other air-sealing valve caps. Bridgeport Brass Co., Bridgeport, Conn.

P120. Air Brake Valve

The Sealco control line safety kit is an installation for trucks equipped



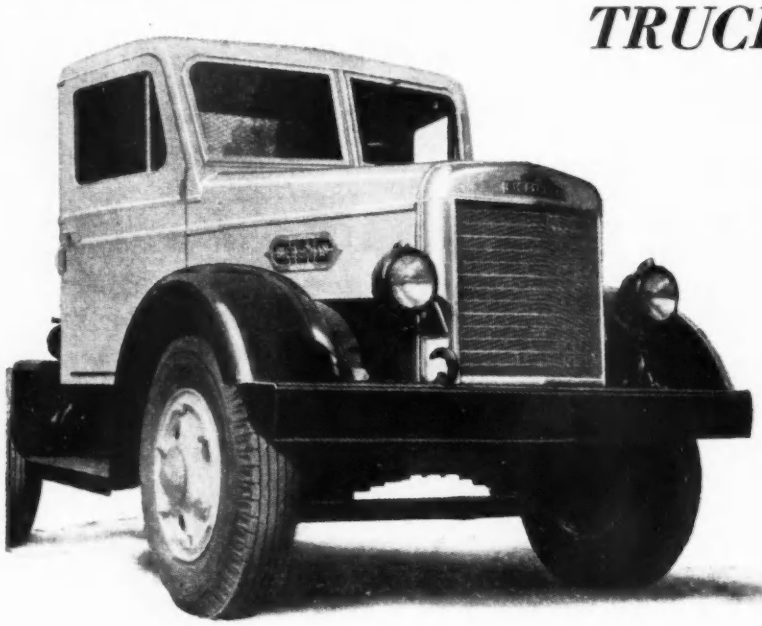
with air brakes. Designed to retain the normal brakes on the tractor in

(TURN TO PAGE 150, PLEASE)

THE

BIEDERMAN

TRUCK



An All-Star Truck

Constructed of All-Star Units

Doing an All-Star Job Since 1920

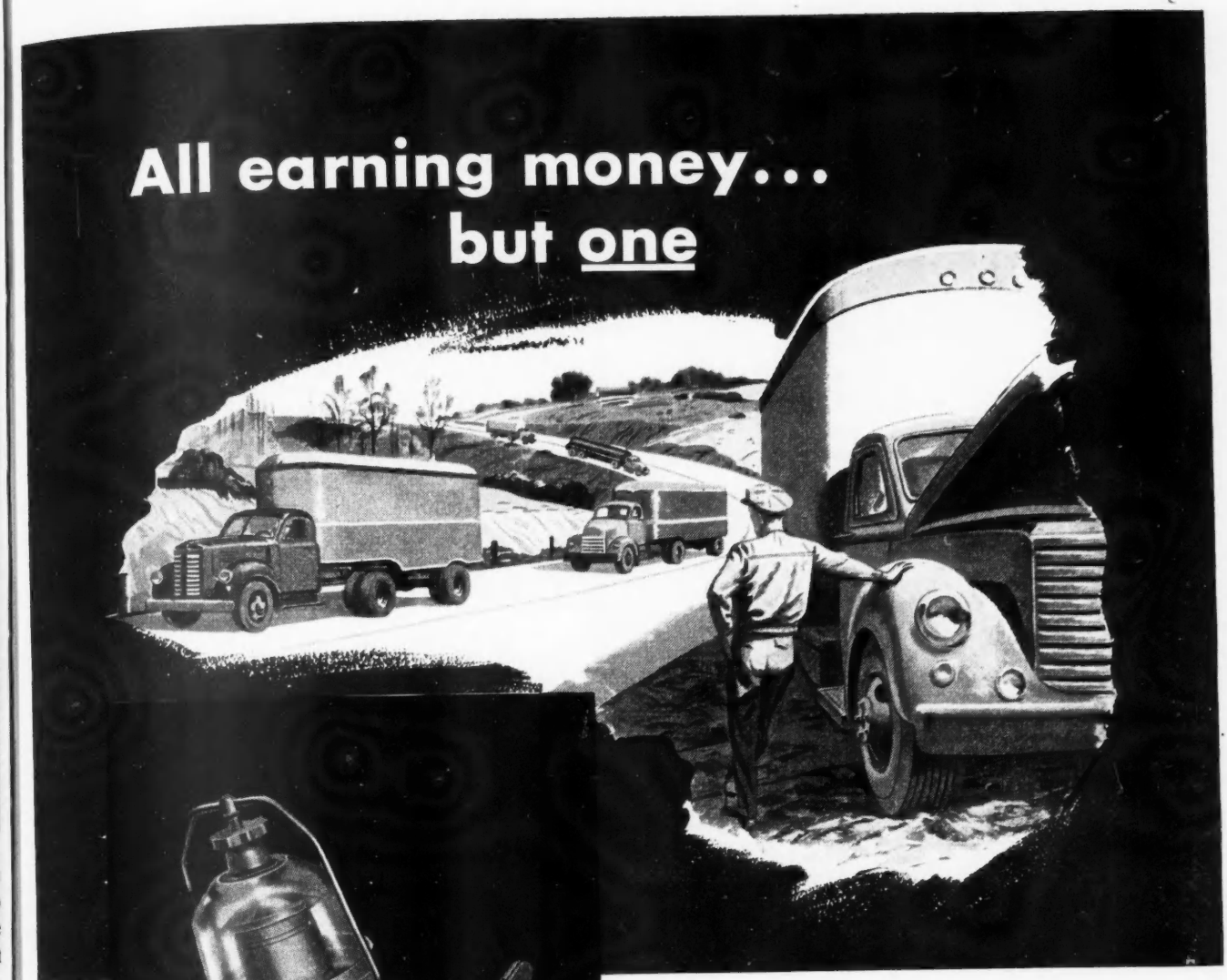
DEALERS: Compare the Biederman National Standard Model with any truck on the market and you will agree that it is an All-Star team in itself. Nothing but the most sturdily constructed units by America's leading manufacturers are built into it. It has strength, durability, comfort for the long drive, accessibility of every part and modern design.

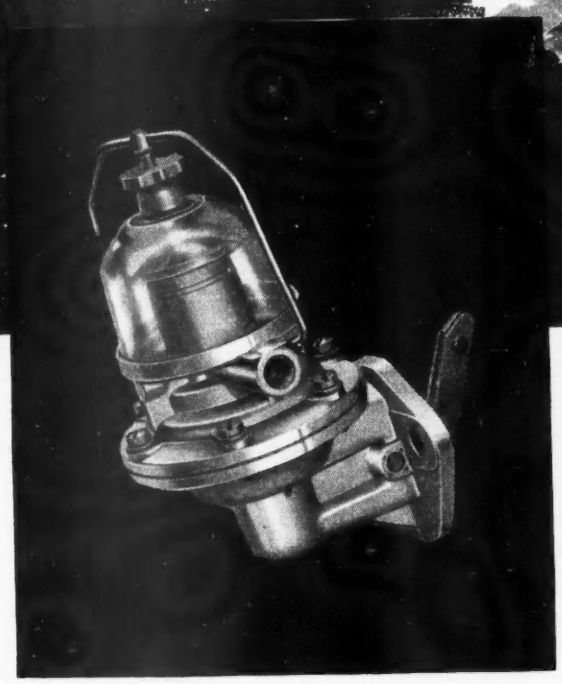
There is still some territory open. This is your opportunity to secure the Sales Franchise of a quality product. Write or wire us today for complete specifications and details.

BIEDERMAN MOTORS CORPORATION

CINCINNATI 14, OHIO

All earning money... but one





THE AC FUEL PUMP SYSTEM HELPS KEEP YOU OUT OF TROUBLE

That truck by the roadside is losing money for its owner . . . because the fuel system failed.

No need for that. The AC Fuel Pump, properly serviced, is one of the most reliable units on any commercial vehicle, ensuring a constant supply of fuel for tens of thousands of miles.

Inspect your AC Fuel Pump at regular intervals for pressure and flow . . . and do as many operators do, replace all pumps at specified mileages. Those are the ways to guard against failure.

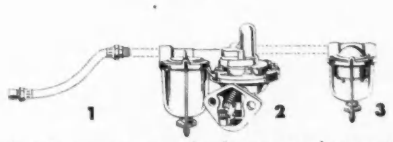
You can go farther. The complete AC Fuel Pump System gives you 3-way protection. It's the Pump, plus the AC Gasoline Strainer, plus the AC Flexible Gasoline Line.

AC SPARK PLUG DIVISION • GENERAL MOTORS CORPORATION

AC

FUEL PUMP

SYSTEM



1. Leaky fuel lines are not only dangerous, but cause faulty operation of the fuel pump. Install a new **AC Flexible Gasoline Line** when you replace your fuel pump. **2. AC Fuel Pump,** Heart of the Fuel System. **3. AC Gasoline Strainer** keeps dirt and water out of carburetor, promotes easy starting and protects delicate carburetor parts. Your fuel system needs one.

New Products

(CONTINUED FROM PAGE 148)

case of a breakaway between tractor and trailer, the unit also makes it possible to retain the brakes on the entire vehicle in case the service line between tractor and trailer should be disconnected.

With the No. 1600 kit installed, no air from application valves is ever passed off the truck to the trailer as these lines are dead-end at relay valve diaphragm. Emergency line air pressure is delivered to trailer as usual. When application valves are opened, the relay valve opens, delivering service line pressure to trailer out of emergency line on tractor through the relay valve.

When both lines between tractor and trailer are broken, trailer goes into emergency braking as usual. Broken service line can lose no air off tractor because relay valve diaphragm prevents passage beyond that point. With open emergency line on tractor, pressure is lost on bottom of safety valve No. 1600, causing this to close. With both lines so closed, tractor retains normal braking. Homer T. Seale, Inc., Los Angeles, Cal.

P121. Water Wash Booth

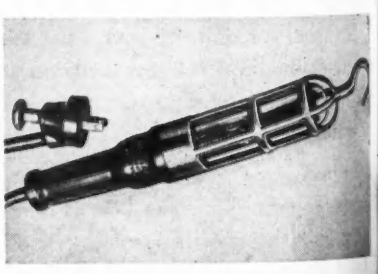
Binks Dynaprecipitor water wash spray booth removes overspray and fumes through a solid, unbroken cur-

tain of water. Five successive scrubbings remove and collect all paint solids and pigment for disposal or reclamation. No paint particles ever reach the exhaust stack to deposit on fan blades and throw them out of balance or form unsightly accumulations on surrounding property.

Water is constantly re-circulated by centrifugal pumps. Exhaust air, free paint, passes through moisture eliminator plates which remove practically all moisture from the washed air. Binks Mfg. Co., Chicago, Ill.

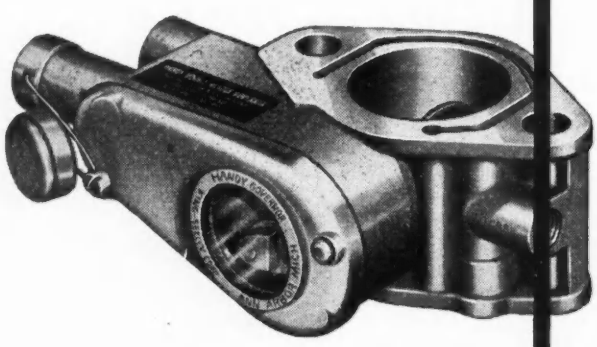
P122. Extension Light

Extension hand light called the Neogard is made of non-metallic ma-



terials and is spark-proof. Lamp guard is made of high impact, red, non-metallic material, and contains no exposed metal parts. Guard throws

(TURN TO PAGE 152, PLEASE)



This GOVERNOR

HELPS KEEP the Emotional Driver OUT OF TROUBLE

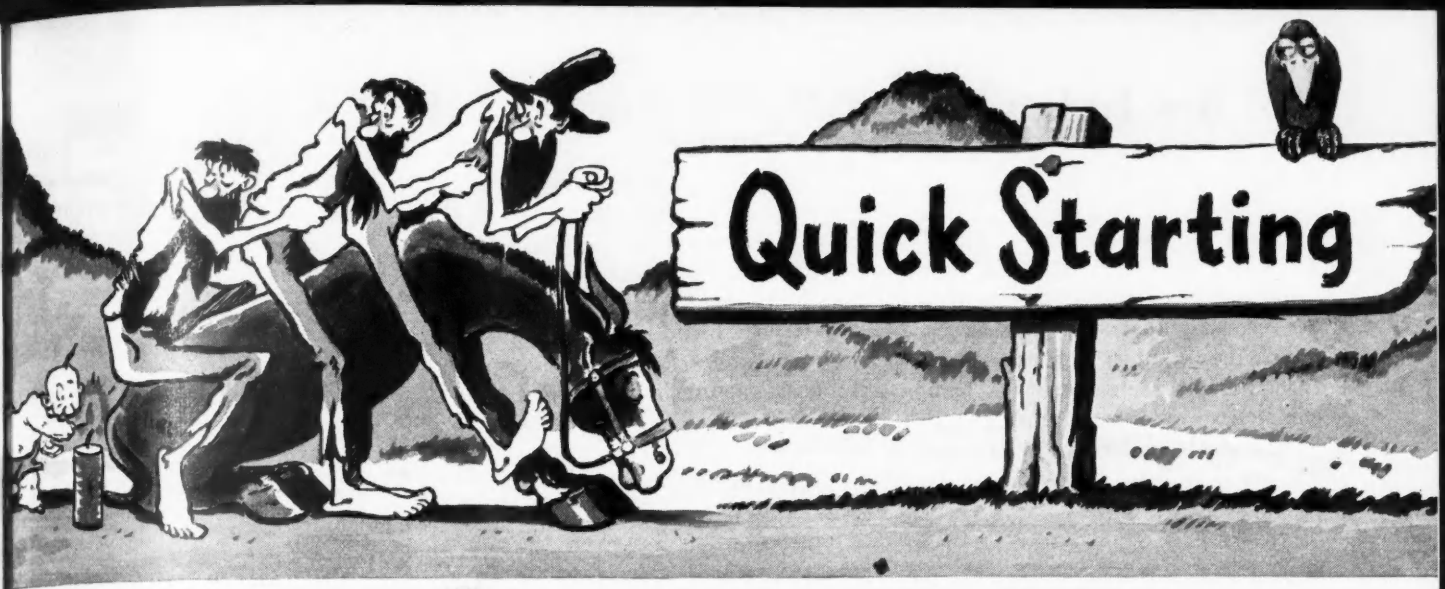
Anger, fatigue, grief, or joy—any one of these can temporarily transform a reasonably good truck driver into a serious traffic menace. This very thing has happened too often to ignore the danger of these human reactions.

The Handy Vari-Speed Governor, however, is not human, is never emotionally involved, but always comes to the assistance of the human driver who is. When your truck fleet is equipped with the Handy Governor, you have good reason to expect fewer accidents, and you will also save on tires, engine repairs, lubrication and brake maintenance.

The Handy Governor costs but a small fraction of what it will save you in its first year of operation.

KING-SEELEY CORPORATION
ANN ARBOR MICHIGAN

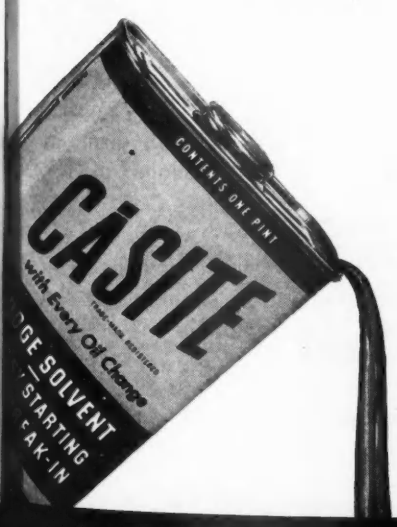
PLANTS IN ANN ARBOR · GRAND RAPIDS · YPSILANTI



. . . WITH CASITE IN YOUR ENGINES

Heaviest engines start quickly, easily—on coldest winter mornings—with Casite in the crankcase. Casite retards congealing of oil, lets motors spin over and start even in sub-zero temperatures.

And fleet engines *keep* going briskly, steadily—for Casite gives that smoother, sweeter performance you've been looking for. Casite cleans motors, keeps them clean—retards formation of harmful sludge and gum. And thousands of miles from now, your engines still will have plenty of power—for Casite gives extra protection. Casite cuts engine wear by improving lubrication. No matter what kind of motor oil is used, Casite gets it around quickly and into the tight spots.



THE CASITE CORPORATION · HASTINGS, MICHIGAN

LIST PRICE 75¢ A PINT

QUICK TUNE-UP FOR OLD ENGINES
EASY BREAK-IN FOR NEW ENGINES

New Products

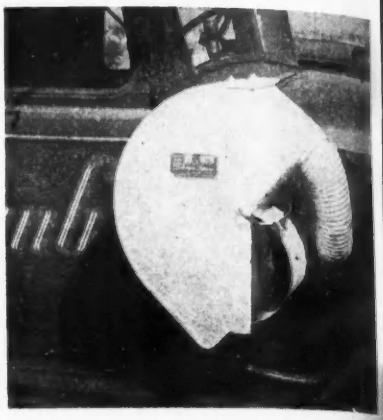
(CONTINUED FROM PAGE 150)

off a red glow when lighted which is a safety signal. As an additional safety, a phosphorescent Neogard can be furnished that will glow several hours after light is extinguished. A special triple seal assures its being completely waterproof and permits its safe use in underwater operations. Neoline. Inc., Los Angeles. Cal.

P123. Hydro Super Charger

The Hall Hydro-Super Charger, a device that automatically meters water vapor so as to maintain a supply of air for the engine at or near the saturation level in rain or sunshine. The unit has a double pad air filter and an arrangement for continuously saturating the inlet pad with water, leaving the oil saturated second pad to remove surplus liquid entrained in the air.

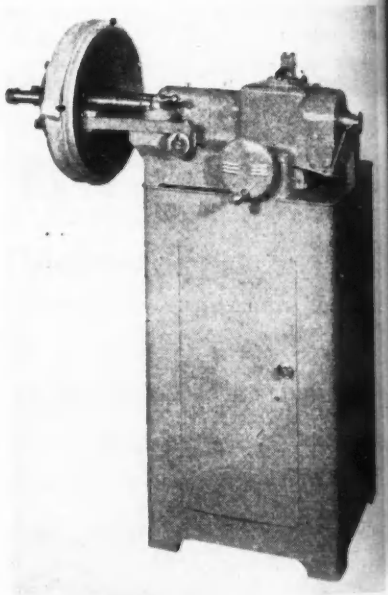
Designed primarily for diesel or gasoline truck application. Complete assembly consists of a water supply tank of sufficient capacity to last a trip or two of considerable length. This is attached to the frame



or located under the seat; an electric water pump for water recirculation; a Hydro Super Charger evaporation unit; hood and intake manifold adaptors, and flexible air connecting hose. Drayer-Hanson, Inc., Los Angeles, Cal.

P124. Brake Drum Lathe

The Evans Pal brake drum lathe will rough and finish cut one drum every 5 min, with no further grinding necessary. For all car and light truck brake drums up to 5½ in. wide and from 8 to 14 in. in diameter. Evans Reamer and Machine Co., New Lexington, Ohio.



P125. Repair Stand

Radiator repair stand allows the placing of a radiator in any position

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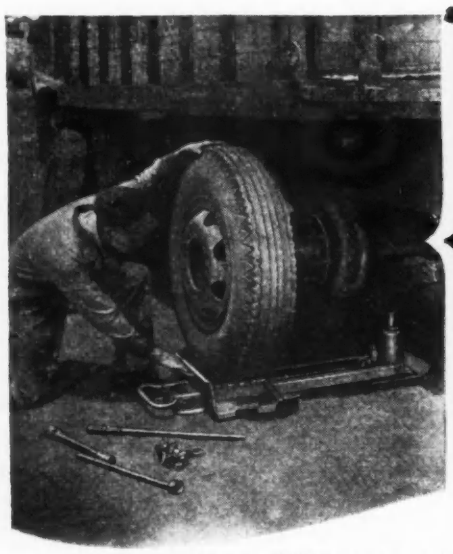


THE NEW *Easy Way* TO REMOVE ANY TRUCK WHEEL

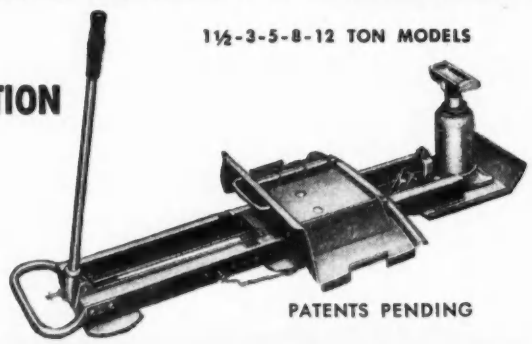
Size makes no difference to a DRUM SAFETY JACK. With a DRUM SAFETY JACK, you never crawl under the truck —you never lift heavy wheels. The DRUM SAFETY JACK does all the heavy work.

Works equally well on front or rear—single or tandem—on over-axle or under-axle suspensions. Cuts down time on tire changes, wheel packs and brake jobs. Get a DRUM SAFETY JACK now—or send for descriptive folder and name of nearest jobber.

THE DRUM SAFETY JACK

- SAFER
- 1-MAN OPERATION
- HEAVY DUTY
- SAVES TIME
- PORTABLE

1½-3-5-8-12 TON MODELS



PATENTS PENDING

DRUM SAFETY JACK

THE CLEVELAND PNEUMATIC TOOL CO.
3781 East 77th Street • Cleveland 5, Ohio

5 REASONS WHY HASTINGS *Aero-type* SPARK PLUGS Last Longer—Perform Better

$1.25

and worth it!

If Hastings Spark Plugs are not yet available in your territory, write direct for illustrated catalog. Distribution is being developed as rapidly as possible—your jobber will be able to supply you soon.

H. T. ALUMINUM OXIDE INSULATOR

A super-strength insulator developed during World War II for fighter planes and superforts—an insulator less subject to fouling, breakage and electrical leakage.

AIRCRAFT STANDARDS

An automotive plug built to aeronautical standards—a plug which shows up best where operating conditions are most severe.

X-RAY INSPECTION

Each and every Hastings *Aero-Type* Spark Plug is inspected by X-ray before it leaves the plant—for proper construction, heat flow and uniformity.

PERFORMANCE RATING

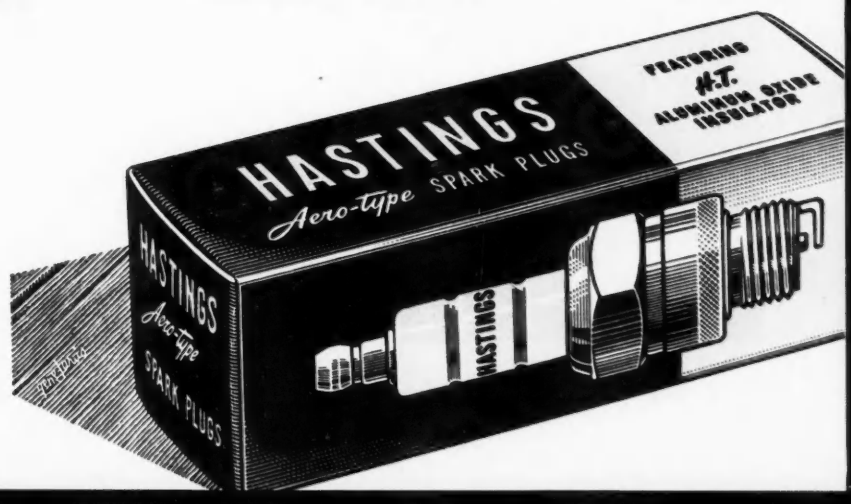
Each Hastings Plug is performance rated by the same tests given aircraft plugs—to be sure you get the right plug for every operating condition.

WIDER GAP SETTING

Hastings wider gap assures positive ignition in all ranges, from idling to top speed—even in engines which burn very lean mixtures.

Spark Plug Division

HASTINGS MANUFACTURING CO. • HASTINGS, MICHIGAN



New Products

(CONTINUED FROM PAGE 152)

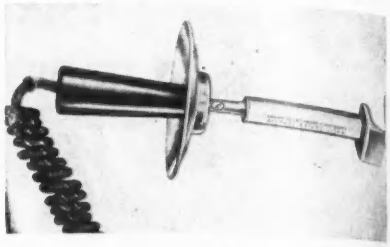
to facilitate its repair or testing. Mechanism permits rotation of 360 deg in any plane, either above the tank, in it, or outside of it. Vertical movement of 24 in. allows full submergence of the radiator in any position, and permits elevation for work on the lowest part at a convenient height above the tank.

Double-lock clamp allows no slippage. Clamp pads of special rubber protect the radiator fins. Operator governs speed of the lift or drop. Kennedy Machine Co., Platteville, Wis.

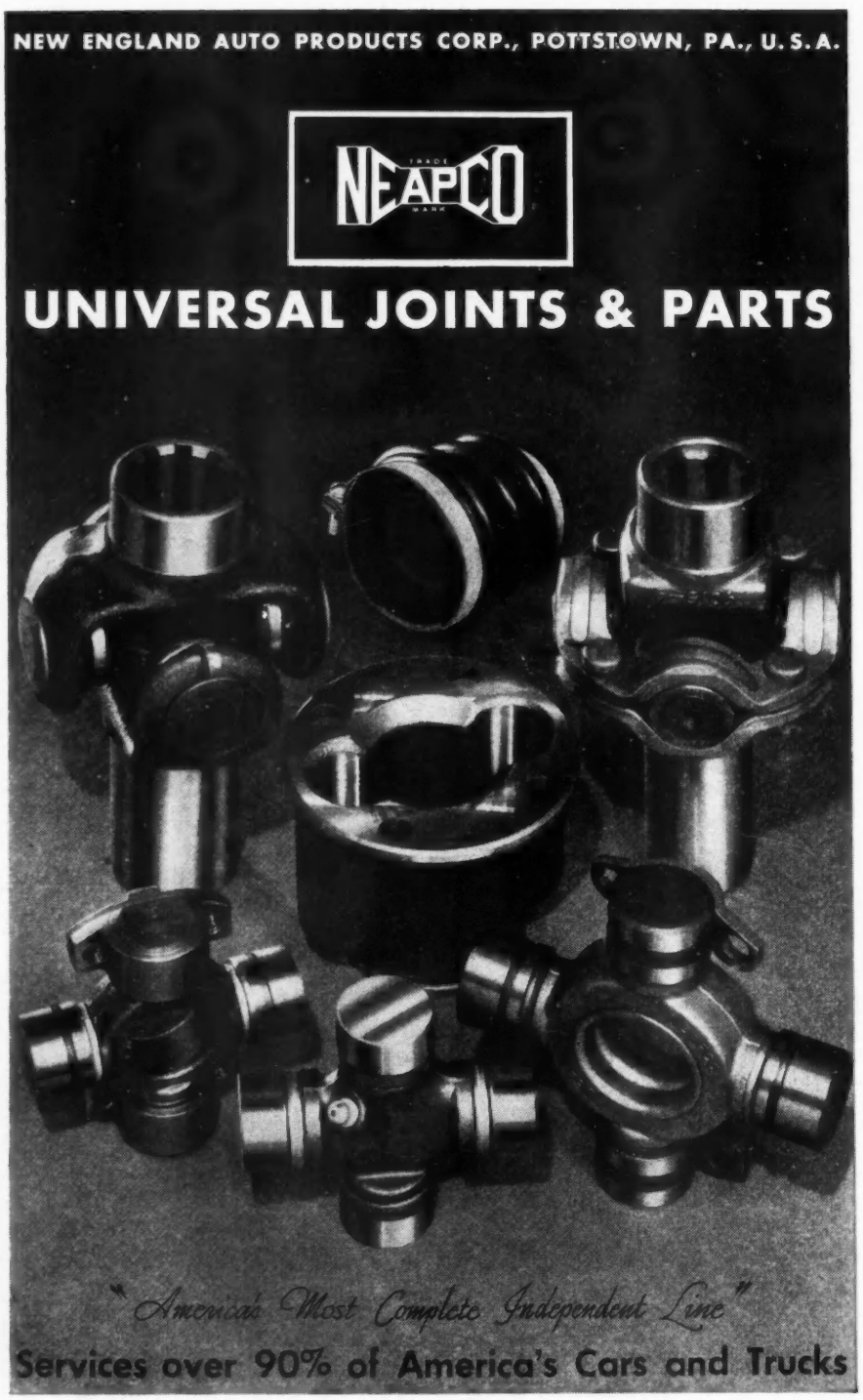
P126. Heated Scraper

For scraping the underside of fenders, doors, bodies, for paint removing, cleaning tars and gums. Electrically-heated scraper is thermostatically controlled for proper working temperatures.

Blade unit is of copper-alloy, tempered to retain its edge. Reaches working temperatures in 2 min and maintains 450 watts. Blade screws

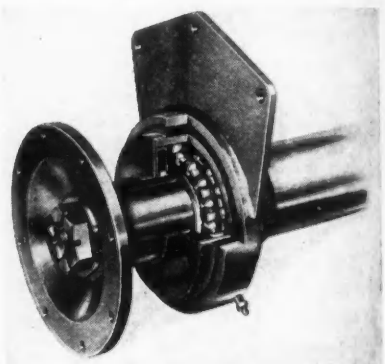


into heating element and may be removed for rapid change-over. Magic Tools, Inc., Los Angeles, Cal.


NEW ENGLAND AUTO PRODUCTS CORP., POTTSTOWN, PA., U.S.A.
NEAPCO
UNIVERSAL JOINTS & PARTS
"America's Most Complete Independent Line"
Services over 90% of America's Cars and Trucks

P127. Prop Shaft Box

The SKF rubber cushion propeller shaft box features a rubber cushion that dampens and absorbs at the



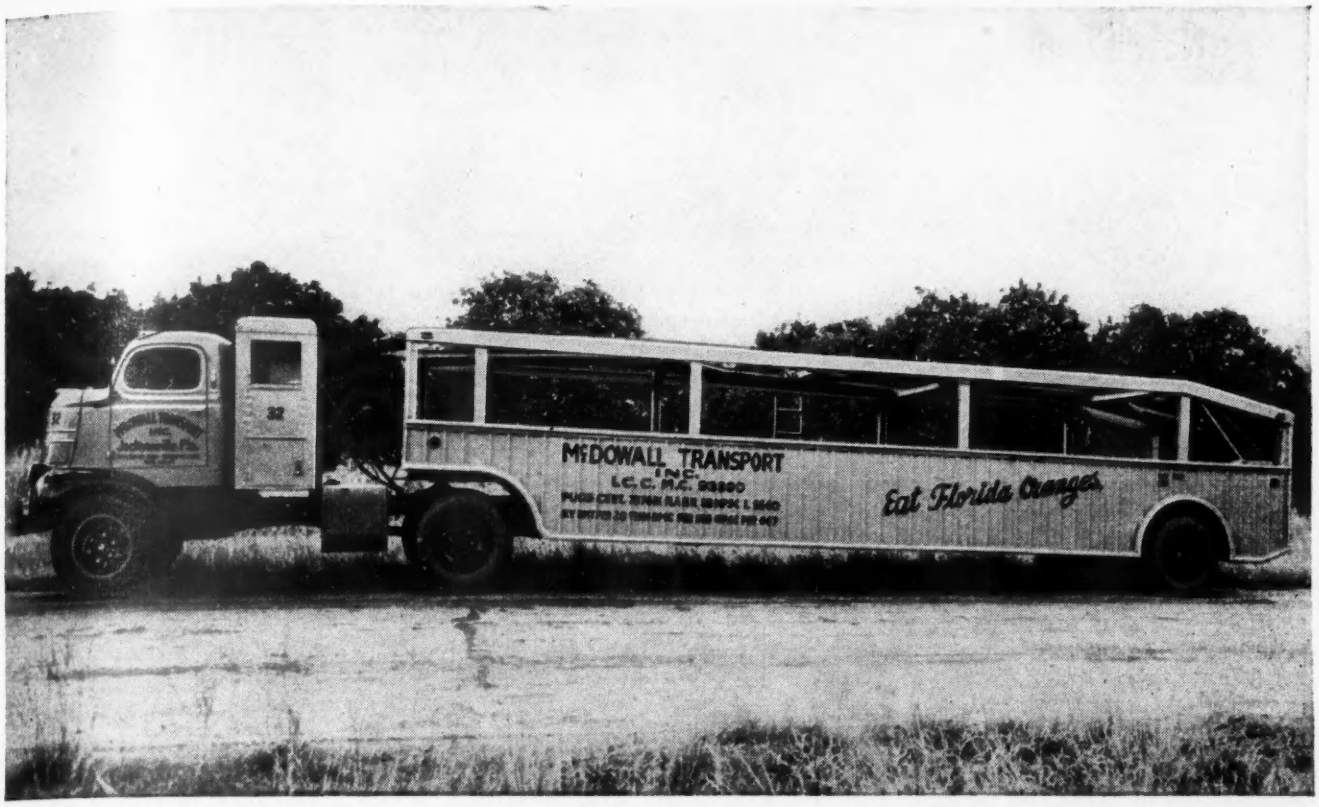
source the destructive vibration of heavier and higher speed shafts. A special seal protects the bearings from dust, dirt and road splash. Of welded construction, the assembly has self-aligning ball bearings designed to provide shaft stability with rugged usage. SKF Industries, Inc., Philadelphia, Pa.

P128. Safety Flare

"Electric Flare" is molded of unbreakable red ethyl cellulose with a black lens ring formed of the same

material, to which is added a clear lucite rod tinted red on the outside except at the end. Lighted by standard flashlight battery cells, the unit

(TURN TO PAGE 156, PLEASE)



Tire dealer helps fleet owner get more mileage

After this unit of McDowell Transport Inc. was changed over to Budd advanced rim wheels, Chuck Gilham, its driver, reported 85,000 miles on trailer and 98,000 on tractor tires before recapping. Now all 37 units in the McDowell fleet are similarly equipped.

The changeover was worked out by Frank Hoetke, commercial tire salesman for Great Southern Stores, Inc., Orlando, in cooperation with Tommy Thomas of Southeast Wheel and Rim Company, Budd Wheel distributor in Jacksonville.

There are 64 Budd Wheel distributors in the United States and Canada, and they work very closely with tire dealers everywhere. Consequently, the expert services of Budd distributors are no further away from you than your own tire dealer.

Plenty of tire men are like Frank Hoetke and believe with him that "the best way to build a reputation for your tires and your firm is to make sure the tires are mounted on proper size wheels." And they turn to Budd which offers *the only complete line with advanced rims.*

You don't have to operate your units 3000 miles a week, as McDowell does, for tire savings to become important. A phone call to your tire dealer, or nearby Budd Wheel distributor, may easily put you on the road to those savings. The Budd Company, Detroit 14.

This label (in blue, red and gold) appears on the rim of every Genuine Budd Wheel

New Products

(CONTINUED FROM PAGE 154)

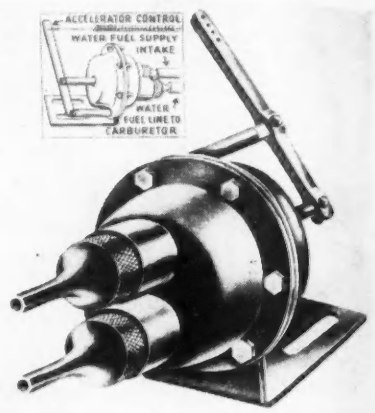
acts as a safety light for meeting highway emergencies as well as a flashlight for directing traffic and other uses.

A heavy rubber suction cup on the back end of the case fits to the fender or stands on road. Gits Molding Corp., Chicago, Ill.

P129. Fuel Injection

The "Hydro-jector," a compact, easily installed fuel injection system, is controlled through connection with the accelerator. As the supply of gasoline is increased, the supply of special water solution injected into the carburetor is automatically increased in proportion, through new device.

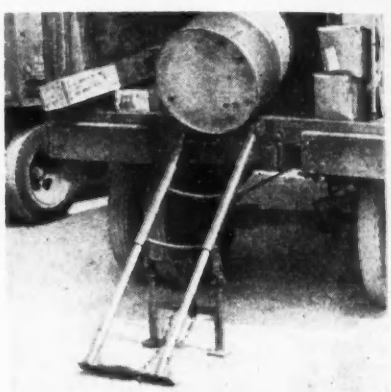
Injecting a water solution into the carburetor increases engine power about 25 per cent and, at the same time, eliminates engine knocks due



to pre-ignition, and reduces carbon deposit, the manufacturer claims. Unit is available for all makes and models of cars and light trucks. Associated Laboratories, Inc., Cleveland, Ohio.

P130. Unloading Ramp

Made of cold drawn seamless steel tubing; weight 120 lb; capacity 2000 lb. Four bolts hold the unloading ramp to the truck bed. Can be used as a full ramp, half ramp or catwalk. Lower section slides into the upper section and is held with a pin and safety lock when hanging vertically for traveling. Ramp is equipped with two I-beam bumpers for its protection when backing into the dock. When not in use it folds into vertical position, providing a ladder. Welded construction throughout. Marion Ramp Co., Marion, Ohio.



P131. 12-Gage Porto-Shear

The 12-Gage Porto-Shear will cut 12-gage standard sheet steel while cutting approximately two gages thinner in Monel metal and stainless steel and approximately 50 per cent above the rating in sheet copper, aluminum, lead and other non-ferrous metals.

Simple in design and light in

(TURN TO PAGE 158, PLEASE)

GET ALL THE LUBRICATION GOOD OIL PROVIDES!

WGB Clarofication Assures Lower Lubrication Costs—Longer Engine Life

AND HERE'S WHY: Intensive laboratory tests prove conclusively that correctly processed, properly formed and adequately supported, fine cotton is the most efficient filtering medium for all kinds of oil. Further, WGB Clarofication thoroughly cleans the oil—without removing essential additives or other lubricating qualities. The WGB Cartridge outlasts other types by a ratio of 2 to 3 . . . cuts engine repairs to a new unheard-of low—and can be changed without tools. Get to know the advantages of WGB Clarofication.

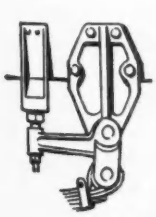
W. G. B. OIL CLARIFIER, INC.
KINGSTON, N. Y.

Chicago to Los Angeles by BROWN— with Payload That's Profitable in Every State

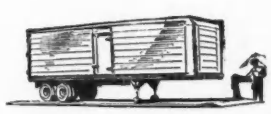
ICX had a problem common to the industry — how to increase payloads on a long haul that crosses low-load states. Like scores of other operators, they found the answer in lightweight Brown Aluminum Trailers. A fleet of Browns took over this haul—put new profits in the operation with thousands of pounds of extra payload.

If a combination of deadweight in your trailers and load limitation is devouring your profits, it will pay you to investigate Browns. Lightweight materials plus frameless airplane-type monocoque construction gives a combination of light weight and ruggedness that puts extra pounds in the payload and saves on maintenance.

Brown's techniques and know-how gained from a quarter century experience in the use of lightweight metals can't be copied. Brown is the original frameless lightweight aluminum trailer. They have been tested on millions of on-the-job miles by operators from coast to coast. Ask them what they think about Browns.



AXLE ADJUSTING KNEE
All Brown Trailers are equipped with an easy-to-adjust axle knee that saves time, tires, and money—reduces drag and road friction — eliminates chatter and helps steady braking action. This exclusive Brown feature is built-in and a simple adjusting screw aligns the wheels.



"The scale tells the tale"

Brown ALUMINUM TRAILERS Spokane, Washington
Chicago, Illinois
2317 W. 18th St.

Sales and Service in: Akron, Chicago, Cincinnati, Cleveland, Denver, Detroit, Fort Worth-Dallas, Fresno-Sacramento, Great Falls, Jacksonville, Kansas City, Los Angeles, Milwaukee, Minneapolis-St. Paul, St. Louis, Salt Lake City, San Francisco, Seattle, Spokane.

New Products

(CONTINUED FROM PAGE 156)

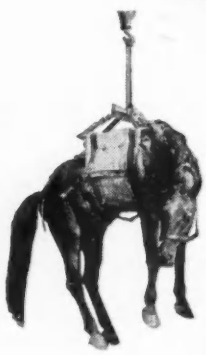
weight, this portable shear will cut on a radius as small as 1½ in. A rapid reciprocating action of the vertical blade against the stationary horizontal blade makes a clean smooth cut without burrs or ragged edges on either piece. The Black & Decker universal motor delivers 1100 strokes per minute at full load. The Black & Decker Mfg. Co., Towson, Md.

P132. Metal Repair Kit

Wonder Cloth, a cloth-like, rustproof, waterproof material impregnated with resins that give it a permanent bond with the parent metal and its companion Wonder Metal, for body and fender repairs. Applied in three basic steps, the material dries to lead hardness and may be ground, filed or sanded to a feather edge for smooth paint or lacquer finishing. John E. Moore & Co., Cleveland, Ohio.

Put Your Money on the Thermoid Line

Built for Heavy Duty Service



Thermoid is the best name in fan belts. Thermoid's famous pre-stretching *prevents* stretch, slip, wear and fail, the four steps that, in ordinary fan belts, mean added maintenance costs. Thermoid fan belts always stay the same size.

Insist on Thermoid Fan Belts because it's good business to buy the best! Matched sets are available for belt drive applications where needed.

The Thermoid Line

Brake Linings • Clutch Facings • Fan Belts
Radiator Hose • Hydraulic Brake Parts and Fluid
Car Mats • Thermoid Precision Process Equipment
Complete Brake Service Departments

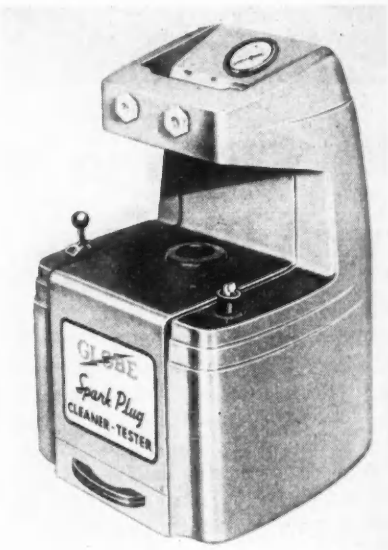
Thermoid Company, Trenton, New Jersey

P133. Trouble Lamp

Pro-Tex-U-Lite trouble lantern features a 5-way combination switch which allows combinations of (1) red flasher and trouble light, (2) steady red light and trouble light, (3) trouble light alone, (4) red flasher alone, and (5) steady red light alone, mounted on an adjustable base which allows easy focusing of trouble lamp and at the same time makes the red flasher visible to on-coming vehicles. Weister-Hill Mfg. Co., Canton, Ohio.

P134. Spark Plug Cleaner

Streamlined, combination spark plug cleaner and tester features a universal rubber cleaning grommet which speeds up the usual cleaning routine. Grommet accommodates all diameters of spark plugs in the air blasting process. The small size unit is of aluminum casting construction. It has a built in water-trap with an outside drain cock. Air valves are finger-tip, toggle-operated. Globe-Union, Inc., Milwaukee, Wis.



(TURN TO PAGE 160, PLEASE)

Here's your guide to the right Hand Tool for every job. 90 colorful pages! A complete Line! Look in your New Britain Catalog and phone your Jobber . . . that's all you do to get the Tool you need TODAY!

When you need Tools, why make your work and your profits wait . . . pick up your phone . . . call your New Britain Jobber . . . and you'll have the Tools you want in a matter of hours, instead of days! Any and every New Britain Tool you'll ever need is no further away than a phone call to your automotive Jobber. So make certain of getting the *right* Tool . . . and make certain of getting it *fast!* Order New Britain BY PHONE! The New Britain Machine Co., New Britain, Conn.

New Britain

GREATER STRENGTH • BETTER FIT **HAND TOOLS**

New Products

(CONTINUED FROM PAGE 158)

P135. Heater Hose

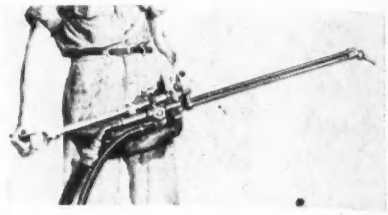
All-metal, non-leakable tube assembly developed for the gasoline heater exhaust connection to the intake manifold. Designed to insure constant pressure tightness, the new flexible, corrugated hose, called Heatflex, features a seamless, braided bronze assembly welded to the copper tube extension. Flexpansion Div., Techniflex Corp., Port Jervis, N. Y.

P136. Converter Fluid

Stanotorque Converter Fluid suitable for use in hydraulic torque converters in which the manufacturer recommends the use of a low viscosity oil. This product is high in stability and possesses the following special qualities: detergent-dispersant, anti-corrosion, non-foaming, special oiliness. Standard Oil Co. of Indiana.

P137. Steam Gun

Oakite Solution-Lifting Steam Gun, Model 481, designed to facilitate volume cleaning operations. The gun, with an over-all length of 5 ft, is ruggedly constructed and so balanced that it may be used over extended periods without tiring the operator.

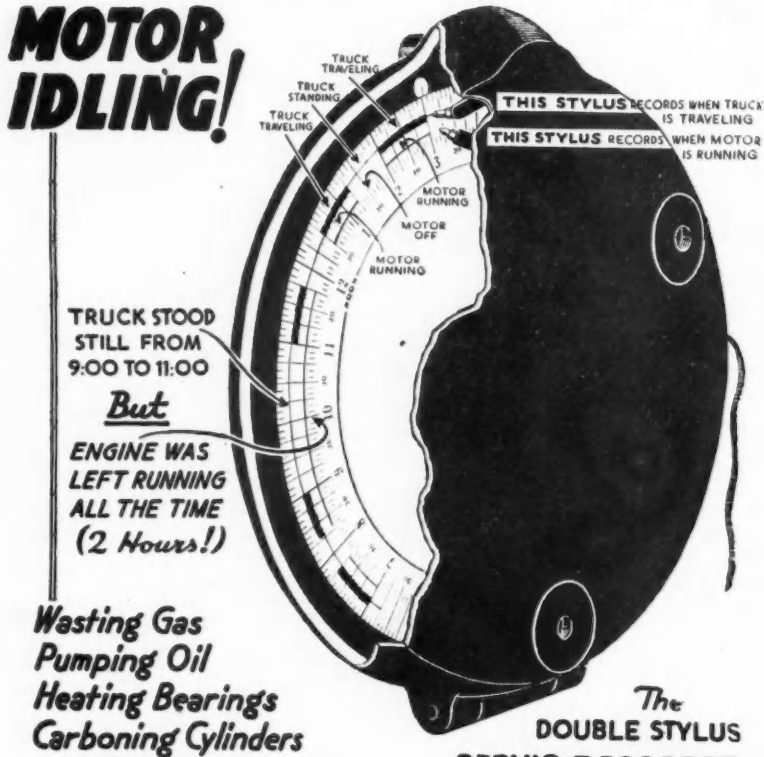


Two spade-type, insulated handles are provided. Steam and solution hoses are connected to the gun by swivel joints and remain stationary when the gun is rotated. Develops sufficient vacuum to discharge cleaning solutions to a height of over 12 ft to permit rapid, thorough cleaning of large equipment surfaces. Oakite Products, Inc., New York, N. Y.

P138. Charcoal Heater

The Simplex one-piece all-purpose charcoal heater for refrigerator trucks is designed with a burning rate of from .25 to 16 lb per hour, to compensate for the majority of variations in transportation. Low, medium or high burning rates may be manually adjusted or made automatic by an available thermostat control. Burning rate is 60 hours at .5 lb per hour. Fuel capacity is 31 lb; weight, 53 lb; and size, 14 x 30 in. Ford Charcoal Briquets are recommended for fuel. Price of the unit is $30.75. Adolf Eccardt, Brooklyn. N. Y.

(TURN TO PAGE 163, PLEASE)



Stops Waste of Gasoline!

If your driver stops on his route to make delivery and *leaves the motor running meanwhile*—that means just so much WASTE of gas. And with the present shortage, this is no time to waste gas!

But how can you *know* about this waste? Install the "Motor Idling" Model of the SERVIS RECORDER. It has *two* Styluses—the regular Stylus to record when the truck itself is moving, and an additional Stylus to record (on the same chart) when the truck is standing still *but with the engine running*. See chart above.

Right now is the time to watch your gas and oil bills. And the first step in doing that is to write us for our folder on our *D-S Motor Idling Model*. Write today. The Service Recorder Co., 1375 Euclid Avenue, Cleveland 15, Ohio.

The Servis Recorder
Helps to Save Gas and Oil

"I bet you thought I wouldn't get it all there?"

New Products

(CONTINUED FROM PAGE 160)

P139. Electric Polishers

Both the Standard and Automatic model of Van Dorn electric polishers have been redesigned to give more power and easier operation.

Both polishers have had the gearing changed to a single reduction spiral bevel gear similar to that now used on Van Dorn Sanders. This has increased the motor power approximately 30 per cent and jumped the speed of both units to 1500 rpm.

Both come equipped with a 7-in. moulded rubber pad, 7-in. sponge rubber cushion pad, lambswool buffing pad, rocker-type switch, reversible side handle for either left or right hand operation, 3-conductor cable, and Van Dorn universal motor. Van Dorn Electric Tool Co., Towson, Md.

P140. Dry Extinguisher

Dry chemical fire extinguisher containing 2 lb of Ansul Plus-Fifty Dry Chemical said to provide maximum protection for flammable liquid and electrical fires.

The dry chemical in the "Emergency Fireman" is non-toxic, a non-conductor of electricity, non-corrosive and non-abrasive. It will not deteriorate, solidify or evaporate and therefore does not require periodic recharging, the manufacturer states. Ansul Chemical Co., Fire Extinguisher Div., Marinette, Wis.

P141. Low Temperature Oil

Kendall's 5W motor oil has a viscosity at —20 deg. that corresponds to that of 10W oil at zero degrees. Under identical circumstances this provides for a higher cranking speed, increased pumpability, and greater assurance of lubrication during the warm-up period than straight 10W oil.

This 5W oil is said to assure ease of starting, instant oil circulation, minimum oil drag during warm-up, increased battery life, and reduced wear due to sluggish oil circulation. Has a —30 deg. pour point and a viscosity index of 125 to provide full-bodied lubrication during and after the warm-up period. Kendall Refining Co., Bradford, Pa.

END

(Please resume your reading on P. 65)

They Said It Couldn't Be Done ...But It Was!

Desludging an 8-Year-Old Taxi With Magnus 755 Without Tear-Down!

AN outstanding example of what Magnus 755 does is provided by the recent experience of a Magnus representative with a Southern taxi fleet.

They'd always "been from Missouri" when he told them what ‡755 could do, but this particular morning they hauled out a 1941 Chevrolet taxi and asked him to see what he could do on *that* one!

He drained the oil, put in Magnus 755 and ran the engine at idling speed for an hour. Then the crankcase was drained, one gallon of kerosene plus a quart of ‡30 oil was put in, and the engine flushed and drained.

That was when the Magnus man had the laugh on the doubters! That old engine, sludged to the limit as a result of its stop-and-go operation, was as clean as a whistle! Screen, pan, engine, were almost factory-clean. Varsol poured in the oil line ran full flow out of all six lines at the same time.

Magnus 755 will do as thorough a job on any of your trucks or buses, no matter how badly sludged. We're ready to prove the point—any time! Magnus 755 is now being used for this operation in hundreds of fleets.

Ask us for the complete story and for details on our 30-day free trial offer on Magnus 755 for engine desludging.

MAGNUS CHEMICAL COMPANY • 38 South Ave., Garwood, N. J.

In Canada—Magnus Chemicals, Ltd., 4040 Rue Masson, Montreal 36, Que.

Service representatives in principal cities

Patrolling Mason & Dixon Line

(CONTINUED FROM PAGE 71)

there is a lightweight waterproof tarpaulin which measures 30 ft. wide and 60 ft. long.

The first duty of a safety supervisor at a wreck would be aid for the injured, then proper flagging and warning so other wrecks would not be caused. Besides fusees and flags, the supervisor carries two large metal signs which he erects on either side of the wreck. These signs read: "Danger. Wreck Ahead." At night these signs are illuminated with fusees.

If the trailer happens to be smashed, the safety supervisor will cover the cargo with his tarpaulin. He would then proceed to make whatever arrangements are necessary to get tractor and trailer off the highway and then to get the cargo on its way.

We have found this highway patrol system does a good job in conserving our equipment, promoting goodwill for Mason & Dixon Lines with the general public, and in promoting general safety. We are now exploring the idea of equipping our safety patrol cars with two-way radio systems.

Some Spare Parts

BESIDES safety equipment, each highway safety supervisor carries some spare emergency parts for use on our trucks. These consist mainly of ignition points, condenser, marker, headlight and running light bulbs, fan belt, and compressor belt. He can give quick assistance to a disabled M&D truck but he also is under instructions to offer aid to any motorist or trucker in trouble on the highway.

While we appreciate the possibility of a safety supervisor being of aid to one of our drivers when stopped on the road by a minor mechanical or electrical failure, we do not want them to supplant the duties of our regular service trucks. We maintain service trucks and road mechanics for this purpose in Atlanta, Ga.; New York City; Reading, Pa.; Roanoke, Va.; Asheville, N. C.; Kingsport, Knoxville, Cookeville and Chattanooga, Tenn.; and Harrisonburg, Va.

Each over-the-road driver carries a small card in his billfold on which all our terminal and shop telephone numbers and street locations are printed. While the driver is prohibited from moving any great distance from his cargo when stopped on the road, he can either go to a nearby telephone himself or get a passing motorist to call the correct number of the nearest service car.

Reports on Driving Habits

ONE of the work-a-day jobs of our highway patrol is to make written observation reports (see cut) on the habits of our drivers. By making detailed studies of how our trucks are handled in various parts of the system we are often able to make new rules which will reduce the hazard of accidents.

These trailing reports may be made casually and as a matter of course without reference to any particular driver, route or highway condition,

(TURN TO PAGE 166, PLEASE)

GRIEF! RELIEF!

SHE RUNS HOT!

SHE EATS GAS!

SHE'S BURNING OIL!

PULL 'ER DOWN AGAIN!

Make sure your replacement pistons are genuine

ALCOA LO·EX!

Are engine pull-downs crowding your repair shops—keeping too many equipment units off the job? Then it's time to get rid of costly piston grief once and for all by standardizing on replacement pistons of ALCOA LO-EX.

Engines run cooler because ALCOA LO-EX conducts heat fast. You get power instead of "ping". Your oil is a lubricant—not a thinned-out refrigerant!

Pistons fit closer, give better compression, because clearance is controlled by the low-expansion alloy and modern piston design. They seal without seizing.

You save money because engines use less fuel and oil, run longer between overhauls. Pistons of ALCOA LO-EX last longer, too. They're heat-treated to withstand thrust and impact.

It pays to be picky about pistons. So, whatever make of aluminum pistons you buy, be sure they're ALCOA LO-EX, the name that identifies piston castings of genuine Alcoa Aluminum. ALUMINUM COMPANY OF AMERICA, 1916 Gulf Bldg., Pittsburgh 19, Penna.

ALCOA ALUMINUM ®

Aluminum Pistons of ALCOA LO·EX

Patrolling Mason & Dixon Line

(CONTINUED FROM PAGE 164)

or they may be made, for valid reason, on a particular driver or a specific route. A chain of minor accidents may lead to trailing reports for an area and eventually to recommendations for changes in routes or different methods of handling a recurring traffic situation. Trailing reports are most often made in situations where we get "repeater" complaints and violations or accidents that are similar to others before them.

In addition to specific violations the report will show truck speed, condition of highway, weather, light conditions, etc. The supervisor will also pay attention to the condition of the trailer doors or truck endgate, notice wobbly rear wheels and any other undesirable condition that has a bearing on general safety and the security of the cargo.

These reports sometimes lead the way to a general Drivers' Bulletin.

Rules Are Tough & Rigid

HERE'S an example of one issued recently:

"To All Road Drivers. Subject: Excessive Speed and Accidents: By this time you have all received or will receive in the very near future a copy of Mr. A. E. Greene's Safety Department Bulletin No. 21 concerning excessive speed and accidents.

"I do not believe that we have a man working for this organization as an over-the-road driver who hasn't enough experience behind the wheel to know when he is operating a truck too fast, or otherwise recklessly. We are having entirely too many accidents. REMEMBER, ACCIDENTS JUST DON'T HAPPEN—THEY ARE CAUSED.

"You are supposed to be professional drivers who are qualified through years of experience to safely handle any or all highway hazards or emergencies that might occur in your daily work as an operator of a commercial vehicle. We expect you to operate your equipment within your complete control at all times.

"After careful and due consideration we have decided to post the following rules and regulations governing future driver operations, with penalties provided for any driver in violation:

"1. The company speed limit, as you know, is 50 miles per hour. Hereafter, a driver observed exceeding this speed limit will be penalized as follows: 1st offense, 3 days off; 2nd offense, 7 days off; 3rd offense, dismissal.

"2. Operating equipment recklessly. The following items shall be considered reckless driving:

(a) Cutting in and out of traffic.
(b) Passing in 'No Passing' zones.
(c) Passing on curves or hills.
(d) Driving too fast on crooked roads.
(e) Overdriving vision or headlights.
(f) Driving too fast through school

(TURN TO PAGE 168, PLEASE)

Each truck in the E. KAHN'S COMPANY FLEET is now dressed up with that NEW SPRING LOOK.

Superimposed on the gleaming finish of these trucks are PALM BROTHERS brilliant decals at work selling "American Beauty" products every minute . . . every day.

Your fleet can stand out from the crowd in the spring parade too—with PALM BROTHERS DECALS insuring perfection of design and permanent color effects.

ACT QUICKLY . . FOR SPRING IS JUST AROUND THE CORNER.

Send For "A MOVING STORY FOR TRUCK OWNERS" TODAY AND GET THE ANSWER WRITE TO DEPT. 92. No charge or obligation.

THE PALM BROTHERS DECALCOMANIA COMPANY
3736 REGENT AVE., CINCINNATI 12, OHIO
OFFICES IN ALL PRINCIPAL CITIES • SEE YOUR 'PHONE BOOK

"Quit your beefing! Next town we come to, we'll get a new windshield wiper!"

A COMPLETE *NEW* LINE OF SUPER POWER WHITES

HIGHER HORSEPOWER ENGINES

ADDITIONAL LOAD CAPACITY

BETTER FUEL ECONOMY

LOWER MAINTENANCE COST

LEADERSHIP IN CREATIVE ENGINEERING STILL FURTHER ENHANCED

CREATIVE ENGINEERING IMPROVEMENTS . . . not changed appearance . . . feature the new White WC Series of Super Power Trucks and Tractors. Compare prices. See how much more you get from an investment in White Super Power.

Better performance on hills and in traffic . . . saves valuable trip time! Still better fuel economy! Still lower maintenance costs! Even longer life! See your local White Representative for the Correct Application of a new Super Power White to your business. Begin to profit from the extra dividends of an investment in Quality . . . and the low maintenance costs assured by White Personalized Service.

White

THE WHITE MOTOR COMPANY
Cleveland, Ohio, U. S. A.
THE WHITE MOTOR COMPANY OF CANADA LIMITED
Factory at Montreal

FOR MORE THAN 45 YEARS THE GREATEST NAME IN TRUCKS

Patrolling Mason & Dixon Line

(CONTINHED FROM PAGE 166)

zones and villages where there are posted speed limits

"Penalties for violations same as above.

"3. Trailing too close. Hereafter you are not to trail or follow another vehicle at a distance of less than 500 feet. *You must keep your distance.*

"Penalties same as above.

"4. Loafing or otherwise killing time on the highways. It is our honest opinion that any driver should have time off for coffee, coca colas, eats and time to relax, but remember that any time a driver stops and kills an hour or so at any place, that time is lost and cannot be made up. Any time a driver attempts to make up lost time he is bound to exceed the normal speed limit and drive recklessly in his attempt to do so. Penalties for general loafing along the roads (same as others).

"We now have safety supervisors on the road at all times and we realize they cannot check and trail every truck. Nevertheless they will be on the roads. When you are checked by one of these safety supervisors in the future for a violation of the above rules you will be stopped and informed of the violation you have made and the safety supervisor's report will be forwarded to Kingsport.

"We have no runs that cannot be made within ten hours by your driving under the conditions we have set up, and if it's going to take ten hours to make these runs, then let's take ten hours to make them . . ."

Policy Committees

THE detail work of the Safety Department, such as reporting of accidents, analytical reports, correspondence, collection of claims against others, and recording of drivers' safety records, is handled under the supervision of our resident safety supervisor, who also patrols the headquarters district.

The activities of the Safety Department are directed and coordinated by a committee consisting of the superintendent of drivers, the superintendent of maintenance the resident safety supervisor, and the writer. When important matters of policy are to be decided, our President and the Policy Committee of the company move in on the subject. Safety is not a one-man job but requires the coordinated efforts of top management, the supervisors, and subordinate personnel.

"Whatever made you buy an ornament like that!"

Accident Control

HERE are some very brief comments on other phases of our safety program.

In the event of road accidents we require our drivers to make an independent report of the accident to us. Our safety supervisor when he gets to the scene will make a separate and independent report. This report is a confidential analysis of the accident and gives a comprehensive account of the conditions, a diagram of what happened and a description of what happened. Both reports are examined and checked and from them we make our official report for the ICC and state authorities.

At the end of each month all accident reports are gathered together for reenactment before an accident trial panel composed of two drivers anr two company representatives.

Each accident is reenacted on its own merits. The driver who was involved is not present. There is no one present but the members of the board. This is the time when we determine whether an acci-

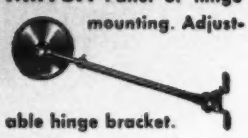
KD C890 De Luxe Fog Lite

Big 5½" sealed beam lamp. Adjustable head. Bumper bar clamp. Clear or amber lens. Chrome plated.

KD 612 Danger Flag

12" x 12" in color-fast, weather-resistant red. Galvanized rust-proof staff. Compact red container keeps flags clean.

KD 108 Extension Mirror. Panel or hinge mounting. Adjustable hinge bracket. Black enamel finish.



KD 333 Stimsonite Triflex Reflector.

Miracle of light reflection. Appears like lighted tail lamp at distances of 300 to 700 feet.

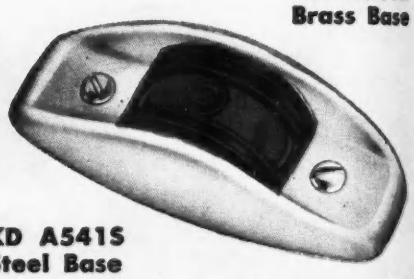
KD C891 De Luxe Junior Fog Lite.

Glass sealed Beam 4⅜" bulb. Amber or clear. Brass body. Chrome finish.

The Complete Line

SAFTEE PRODUCTS

KD A541B Brass Base



KD A541S Steel Base

Armored

CLEARANCE LITE

brass or steel base

●*Now available with steel base priced substantially under cost of this Lite with brass base.* ●*Tough* cast iron armor protects bulb and lens. Fewer replacements. ●Fresnel type "lighthouse" lens (amber, red, green) assures maximum visibility. ●Single unit assembly popular with mechanics. ●Engineered for highway safety, hard usage.

●Patented clips hold screws and lens in housing when replacing bulb. . . *save breakage and lost screws!*

●Brass socket. *Brass base:* 2 CP or 3 CP bulb. *Steel base:* 2 CP bulb. Fibre gasket keeps out dust and moisture.

dent is chargeable or non-chargeable. Three of the total of four votes are necessary for a decision. If it is adjudged a chargeable accident, the offending driver is subjected to whatever penalties apply and his name is published in the Dog House list. If a driver thinks he has received unjust treatment in an adverse decision, he can appeal for a retrial by the same board, provided he can furnish additional evidence not incorporated in the information in the reports.

Company Roadeo

WHILE we encourage our drivers to paticipate in the ATA roadeo contests, we hold a roadeo of our own each year. Drivers who participate are selected from our own drivers in each of five states, two to a state. These ten drivers come to Kingsport for the contest. The drivers get new uniforms for the event and may win other honors and trophies.

While our roadeo is somewhat similar to that of the ATA, we have one event which is interestingly different. That is the road fire using a real fire. Along the exhibition truck route we place a pan of gasoline and oil that can just be extinguished by a one-quart hand extinguisher. As the truck is rolling around the course the oil is ignited and the timing of the driver starts. He must stop his truck, set the hand brake, get out with fusees ten feet back of truck, extinguish fire, pick up fusees, climb back into truck, close door, release hand brake, shift gears and start up again. This event is always enthusiastically received by the crowd. The judge of this event is the chief of the Kingsport fire department.

Company-sponsored Roadeo features this fire fighting event

Safety Smokers

ANOTHER phase of our safety program is the quarterly Safety Smoker. These meetings are built, timed and tested at Kingsport where we have the greatest concentration of drivers. The resident safety supervisor is constantly working on these exhibitions and programs, preparing copy for signs, slogans, stage scenery, bulletins and arranging for motion pictures and speakers. The idea is to try to keep something new and interesting coming up.

Each meeting lasts one hour. Part of the period is devoted to changes in state, federal and ICC laws. Fifteen minutes are devoted to open discussion with drivers on their problems. At least thirty minutes of each meeting is devoted to safety promotion. These meetings get the name of Safety Smokers because the company furnishes cigarettes, cigars, coffee and pie.

When complete it is shown to all the drivers at Kingsport, then taken on the road and shown in 26 different locations in our system during that quarter, making a total of 108 such meetings held during the year with four original productions.

All of these things have a highly beneficial effect on our over-the-road driving. We have men who have been driving for more than ten years without an accident. We make sure that every driver is exposed to the information that he is in a serions and important business, that the company takes him and his job seriously. We want our employees to realize that our cargoes must move swiftly, surely and safely to their destination and that, above all, our service must be dependable.

We want the average citizen, when he sees one of our loaded units traveling along the highway, to say: "That outfit's all right."

END

(Please resume your reading on P. 72)

Now

BLACK DOORS ON STOP AND REAR LITES

●K-D Stop and Rear Lites with BLACK DOORS are again available at prices lower than same Lites with chrome doors. Black enamel body finish. Sturdy construction. Replacement Lites exact duplicates of original equipment.

●KD 204 Combination Stop and Rear Lite . . . universal bracket for adjustment to various bolt centers welded on . . . 3½" Lens . . . connector sealed to body to keep out dirt.

KD B204 Black Door
KD C204 Chrome Door

●KD 205 is the same Combination Stop and Rear Lite as KD 204 with License Plate Bracket attached.

KD B205 Black Door
KD C205 Chrome Door

LITES WITH CHROME DOORS

KD C204	KD C225	KD C236
KD C205	KD C232	KD C244
KD C216	KD C235	

LITES WITH BLACK DOORS

KD 33	KD B221	KD B235
KD B204	KD B225	KD B236
KD B205	KD B232	KD 243
KD B216		

GENUINE TRIFLEX GLASS REFLECTING LENS IN ALL ABOVE LITES

KD 910 SA Sealed Beam Headlite. Single bolt SAE mounting. Stainless steel door. Heavy Duty unit. 6 or 12 volt. With or without parking lite.

KD 515 Flexible Mounted Marker Lite. Ground wire securely fastened across belt. Black enamel finish.

KD C867 Red Emergency Vehicle Lite. Prefocus type bulb. Strong, adjustable bracket. Chromium Plate Finish. Plain red lens.

KD 200 Extra Heavy Duty Stop and Rear Lamp Triflex Reflecting Glass Lens. Black enamel finish.

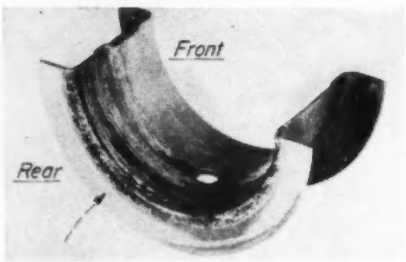
BAYER PRODUCTS

THE K-D LAMP DIVISION
NOMA ELECTRIC CORPORATION
1910 Elm Street Cincinnati, Ohio

MURDER in the Fleet Field

CAUSE - - -
Crankshaft Thrust.

Continued from Page 82



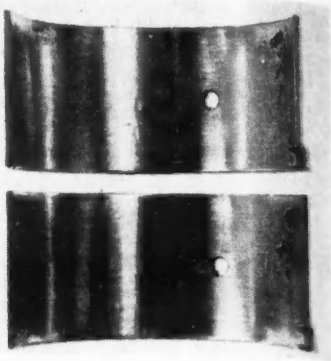
EFFECT - - -

Babbitt facing is completely wiped from the thrust flange, and the exposed steel has been burnished bright and smooth.

REMEDY - - -

Check main bearings with every re-ring job. Adjust to factory standards.

CAUSE - - -
Out-Of-Round Con-Rod Bore.



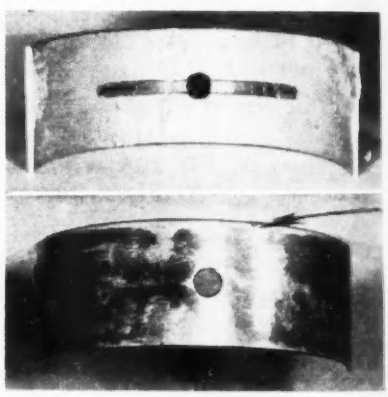
EFFECT - - -

Bearing metal shows fatigue failure due to load stress at lower section. Breakdown resembles fatigue failure but is localized.

REMEDY - - -

Rods must be checked for alignment when new bearings and/or rings are installed as torsion or twist will permit localizing stresses on bearings as well as rings and cylinder walls, and early failure will be experienced. Twisted, bent or otherwise misaligned rods can usually be straightened on an aligning tool.

CAUSE - - -
Bearings Loose in Seats.



EFFECT - - -

Bearing back surfaces are coated with a layer of black varnish. Eventually bearings will burn out due to improper heat dissipation from bearing to bearing cap or rod.

REMEDY - - -

This type of failure is usually laid to improper fitting. Insufficient crush will enable insert to work loose from seat. Misaligned caps and out-of-round rod bores will permit a loose seat. Filing caps and pounding bearing to fit bore will make for improper adjustment and contribute to loose seats.

END

(Please resume your reading on P. 83)

The Cook Construction Company of Jackson, Mississippi, have ten Fabco Dual Drives in service. Five are on heavy duty dump units and five are on concrete mixers. Cook uses the dumps to haul dirt from the pits out over new roadbeds from a turn around haul up to a distance of 12 miles. The concrete mixers operate primarily within the city limits. After operating the Fabco Dual Drives nearly two years, their fleet superintendent says: "These units have performed in a manner satisfactory to us and in accordance with our expectations. They are very flexible and perform excellently for light units. They are especially efficient in handling heavy loads on soft ground. Our maintenance experience compares very favorably with conventional units." Yes, that's just what Fabco Dual Drives are supposed to do—double your traction, increase your load carrying capacity, and permit you to utilize available engine power to best advantage with an additional low gear ratio.

29 Years in this Business

Fabco

F. A. B. MANUFACTURING CO.

1249 SIXTY-SEVENTH STREET · OAKLAND 8, CALIFORNIA

Dual Drives · 6 and 10 Wheel Units · Logging and Highway Trailers · Frame Extensions

"WE'LL TELL THE WORLD"

They're New!

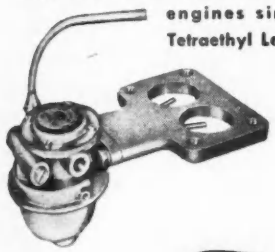
. . . AND MUCH OF THE TELLING will be through the automotive repairman.

Yes, it is the repairmen who will be recommending explaining and installing these radically improved parts that mean so much to longer car life, economy and performance.

That is why it is important that automotive mechanics know about these latest Thompson engineering developments. Get full information from your TP Jobber on availability and applications.

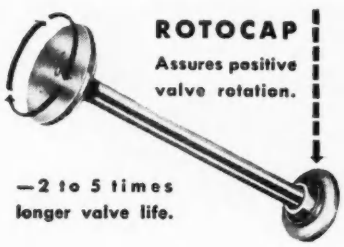
THE *VITAMETER*

Greatest performance booster for engines since Tetraethyl Lead.



ROTOCAP

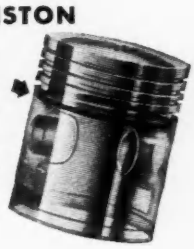
Assures positive valve rotation.



—2 to 5 times longer valve life.

STEEL-BELTED PISTON

Patented cast-in STEEL BELT positively controls expansion. Closer fits without scoring or seizing. An exceptionally strong alloy piston.



VITOL

Anti-Knock, octane boosting fluid — injected only as needed — with the VITAMETER.

SODIUM-COOLED VALVE

An improved, aircraft-type valve for heavy duty automotive service.

Hollow stem contains metallic sodium.

COPPER-COATED "500 BRINELL" SLEEVE

Easier installations. Better cooling. Averages 2½ times longer wear

Thompson TECHNICAL LIBRARY

27 "How-to-do-it" volumes help repairmen. You can own it at NO COST TO YOU!

YOUR BEST BET ALWAYS — THOMPSON REPLACEMENT PARTS

See your TP jobber

Thompson Products, Inc.

CLEVELAND • DETROIT • LOS ANGELES

Air Compressor

(CONTINUED FROM PAGE 95)

Weekly Inspection

1. Inspect oil in motor and compressor. Clean exterior of the unit.
2. Drain moisture from tank. Allow drain cock to remain open until only clean air passes; then close it tightly.
3. Inspect packing around needle valve stem. Tighten if leakage is noted.
4. Check compressor and line for leakage if gage shows drop in pressure when tank needle valve is closed.

Every Three Months

1. Drain oil from compressor crankcase and fill with fresh compressor oil.
2. Remove felts from intake muffler, wash, dry and replace.
3. Check valve seat washer and replace if worn. (Exhaust tank before inspection of check valve.)
4. Inspect check valve and seat washer if air is found leaking from bleeder valve on pressure switch when compressor has stopped automatically.
5. Examine motor brushes and commutator on single phase motor. If worn, brushes should be replaced. Commutator should be wiped clean with rag or sandpaper.
6. Inspect contacts of automatic pressure switch or motor starter. Replace if badly burned.

Installation Tips

When installed, the compressor should be located about the center of the shop so that air lines will not be excessively long. It should be located in the coolest, dryest, cleanest part of the shop, about a foot from the wall, and should be placed so that the tank can be drained easily and the unit serviced as required. The compressor should be bolted solidly to a concrete floor, raised and cushioned by double two-by-fours. The air intake should be located outside the shop, where no moisture, excessive dirt or explosive gases will enter the unit. It should be covered with a hood to prevent rain and snow from entering.

(TURN TO PAGE 174, PLEASE)

Truck Drivers Aren't Minstrels

But they all sing the praises of--

Signal-Stat

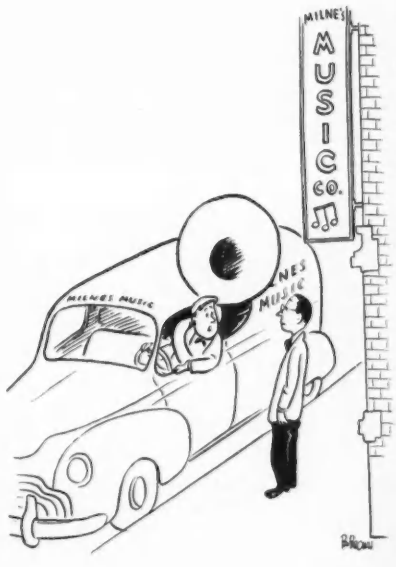
DIRECTIONAL SIGNALS
with the only
BURN-OUT PROOF SWITCH*

*the only switch that can be used with or without flashers.

And there's good reason, too!...
No more inconvenience of outstretched hands that could mean anything.
Now SIGNAL-STAT provides:
Obvious signals of intention to turn, guaranteed by the only Burn-Out Proof Switch that can be used with or without flashers. Available in SIGNAL-STAT sets or as replacements for other switches.
Lamps that are superior for durability, visibility, ease of installation and multiple-position mountings without extra parts.
Sold by the best jobbers and installed by all vehicle owners interested in *promoting safety, avoiding accidents and reducing insurance premiums.*

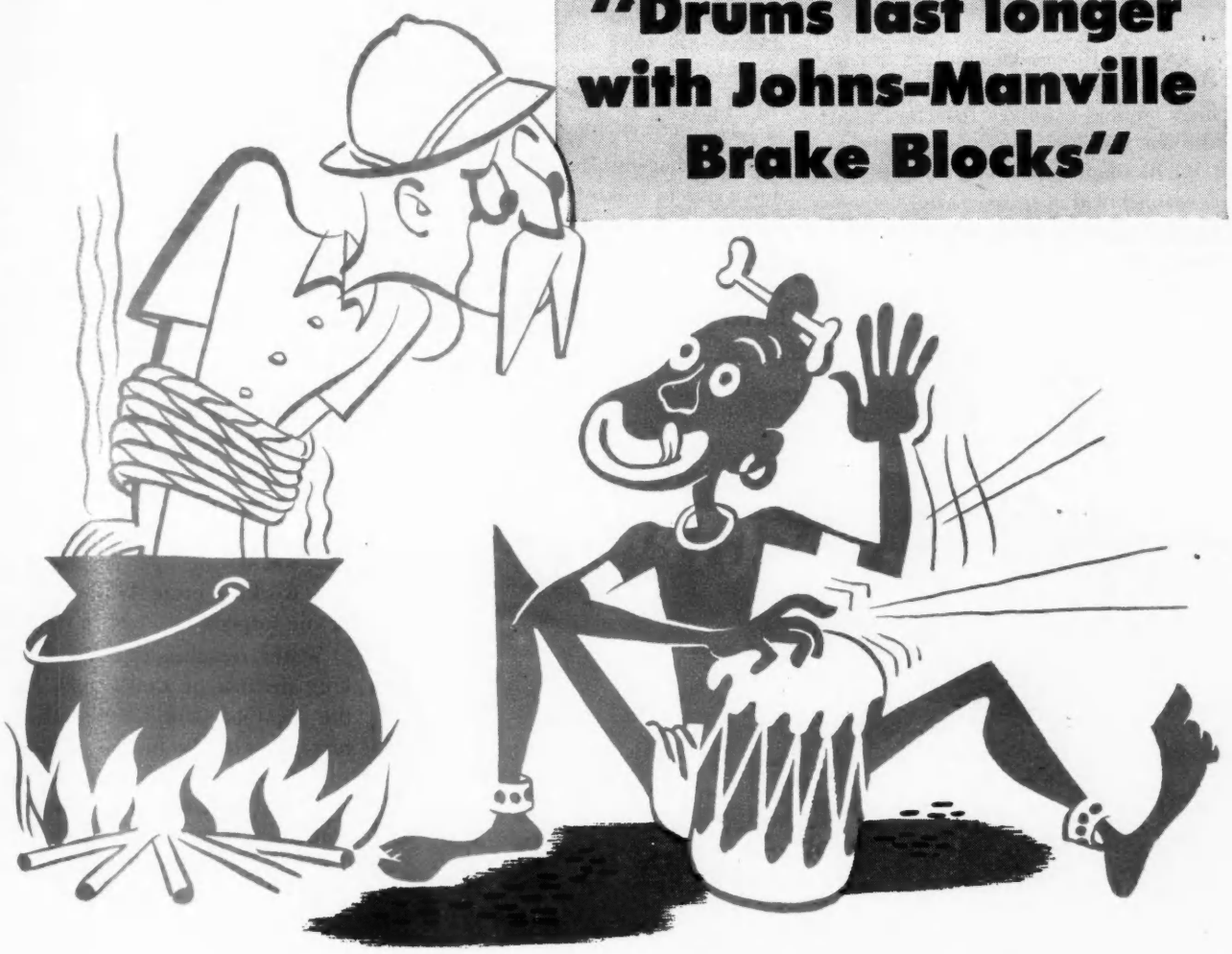
Signal-Stat CORPORATION
1430 Herkimer St., Brooklyn 33, N. Y.

Also Fuse-In-Line Receptacles—Stoplite Pilots—Emergency Brake Pilots



"You sure this is gonna work out all right until we get the horn fixed?"

"Drums last longer with Johns-Manville Brake Blocks"



. . . and you'll have fewer pull-ins, too

Fewer pull-ins mean you're getting bonus mileage and lower operating costs . . . both resulting from the improved formulation of the Johns-Manville Asbestos Brake Blocks now in full production.

And you get another, even bigger advantage.

Your brake drums will wear better, too . . . because the new J-M Brake Block is the result of a scientifically *balanced* formulation that wears slowly, evenly, without costly scoring or checking of drum surfaces.

All this has been proved on the Heat Check Analyzer, an exclusive J-M laboratory device for checking both block life and drum life. These laboratory tests have been carefully checked against actual field results.

You can prove it too . . . by trying the new J-M Brake Blocks on your next pull-in. You'll have both blocks and drums giving you bonus mileage . . . bonus mileage that means lower operating costs.

PRODUCERS OF THE FAMOUS
4-STAR FLEET TESTED SETS

Johns-Manville

JOHNS-MANVILLE JM PRODUCT *Asbestos*

BRAKE LININGS
BRAKE BLOCKS
CLUTCH FACINGS

FRICTION MATERIALS

Air Compressor

(CONTINUED FROM PAGE 172)

Two and three phase motors should always be protected with delayed time fuses. Where ordinary fuses are used and one fuse blows, a three phase motor will single phase and continue to operate, but due to increased amperage the motor will burn out shortly under this condition. Thermal cutouts prevent single phasing and burning out of the motor.

It is not desirable, and in many places it is unlawful, to connect motors larger than ½ hp to a lamp socket, but they should be installed directly into the line. Wires running down to the unit should be sufficiently large to carry the full load of the motor. Otherwise the motor will slow down due to lack of current. Starting switches or starters should always have proper protective devices. Connections should always be made by a licensed electrician.

Tanks and Lines

Accumulation of moisture is an important factor limiting tank capacity. Moisture is a by-product of combustion, and several gallons of water will reduce capacity so that more frequent running of the compressor is necessary. In addition, water and oil emulsions set up a condition favorable to tank explosion. While some tanks are equipped with a moisture extractor, this does not take the place of a drain cock, and the operator should realize that periodic draining is necessary to satisfactory service. Some installations are equipped with automatic drains, a device which automatically drains moisture as it accumulates. This unit will actually eliminate the necessity of hand drainage, but the fleetman should be sure it is working properly during the periodic inspection.

Water remaining in the tank for long periods of time causes rust to the point of tank failure. Manufacturers test tanks before shipment to withstand a safe pressure, but after long periods of usage, it is well to remember that weakness may appear due to rust and corrosion.

Pipe Size Recommendations

It is imperative that adequate size pipe be used with the compressed air installation. Recommendations are outlined below: For 1½ and 2 hp outfits, a minimum of ½ in. diameter line is recommended up to 50 ft; over 50 ft ¾-in. piping should be used. For 3 and 5 hp units, ¾-in. pipe is used, and any installation over 200 ft will require 1-in. piping.

All piping should be free from sharp bends and unnecessary elbows. It should be level, as moisture which passes the extractor will collect in low spots. The compressor should be located in such a position that lines are as short as possible since there will be a definite pressure drop with increase in line length. If lines are run outside, they should be buried below frost level. Connections should be at convenient spots and should be equipped with shut-off valves. It is imperative that there be a safety valve in each line from the compressor.

END

(Please resume your reading on P. 96)

"LIFE EXPECTANCY"

Insurance man talk? Certainly! Consider the life of your vehicles in terms of profit and loss . . . just as insurance companies figure profit and loss from the "life expectancy" of people!

The condition and length of life of your vehicles determines *your* profit or loss. Today's high prices make it doubly important that you have "insurance" against costly replacements and repair . . . against high gas, oil, and tire bills.

You don't have to pay high premiums to insure lower operating expense. A Hoof Governor is your "invisible hand" on the throttle of every costly piece of motor equipment . . . your best insurance against profit-consuming operating costs.

HOOF *key and seal type* GOVERNORS

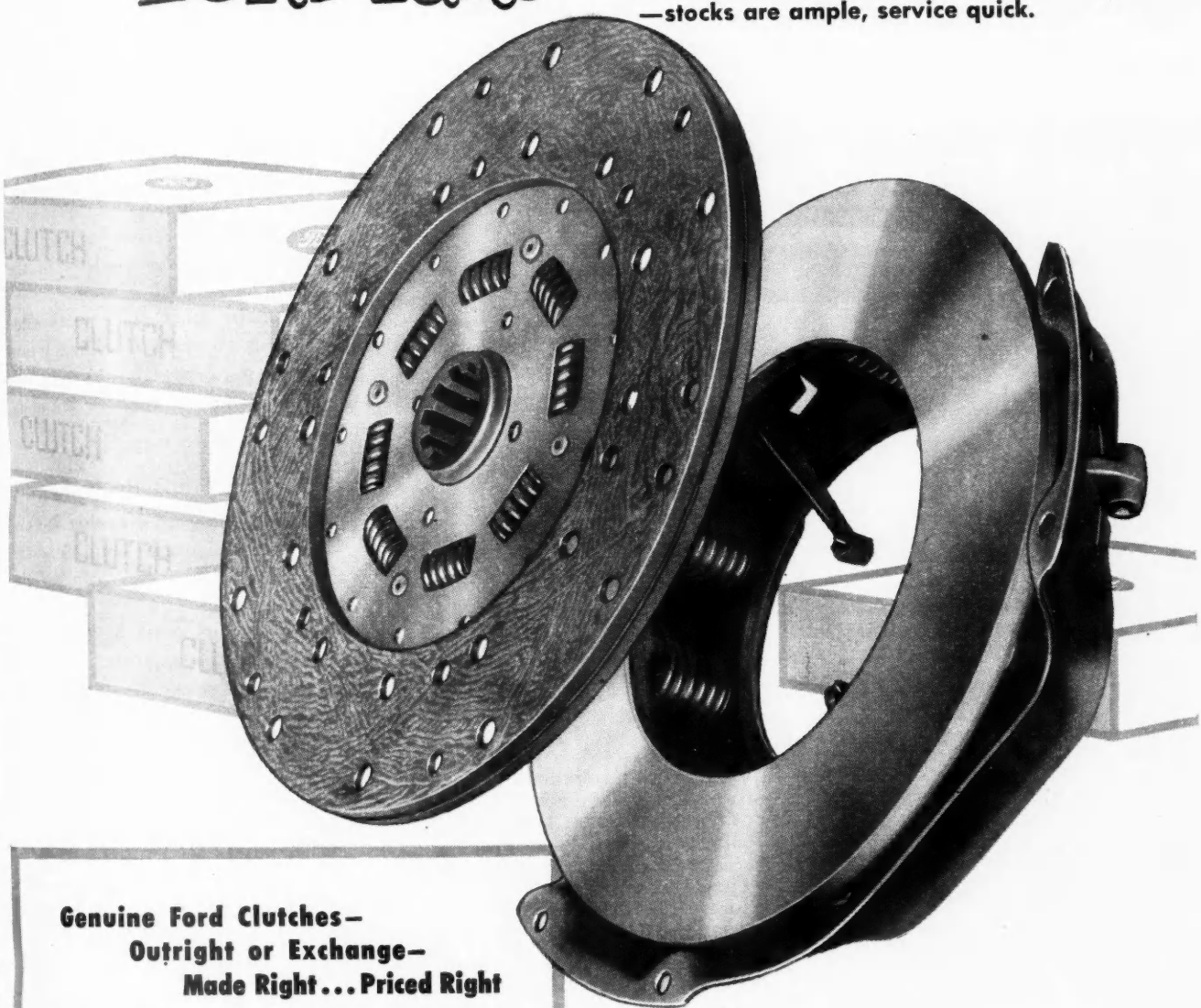
***NEW!** HOOF ALUMINUM-STEEL TIMING GEARS*
Matched Sets for GMC, Chevrolet and Ford V-8!

HOOF PRODUCTS CO., 6543 S. Laramie Ave., Chicago 38, Ill.

Naturally, Ford Owners Prefer

Genuine FORD Parts

That's because Genuine Ford Parts are identical twins to the parts built into Ford cars and trucks at the factory. They are right for Fords—made right to fit right, last longer. You'll save time and money by always insisting on Genuine Ford Parts for your Fords. See your Ford Dealer—stocks are ample, service quick.



Genuine Ford Clutches—
Outright or Exchange—
Made Right... Priced Right

Genuine Ford Clutches are balanced to prevent undue vibration and wear, assuring longer, trouble-free life even under extreme operating conditions. Especially designed for a given engine torque, exceptionally low pedal pressure is required for operation. Centrifugal weights attached to the release levers automatically increase the pressure against the disc as the engine speed increases, thus preventing slippage. For smoother, longer clutch life—always use the Genuine Ford Clutch.

Genuine FORD Parts...
Right for FORDS!

FORD MOTOR COMPANY

Valve Troubles?

(CONTINUED FROM PAGE 69)

Valve Seat Machine

WE set up a special bench and built some equipment for removing and installing removable valve seats. This bench is made of steel and is equipped so that one man can work on heads and valves and do everything needed without walking more than a few steps.

Not all of our heads were equipped for removable seats so we rigged up a power-driven drill press on one end of the bench to cut seats for hard inserts. The tool for this is a rotary cutter with a pilot stem which fits into the guide, thereby positioning the cutter in exactly the right place. (Fig. 2). To the left of this drill press we have our home-made press for installing the seats and when cutting out for seats we use this press for a vise to hold the head while being drilled.

The press we made for installing these parts (Fig. 3) was made from a salvaged airplane wing jack. It is hydraulically operated and the pump handle is located beneath the bench. It exerts 15 tons pressure and installation of inserts is a matter of but a few minutes time.

We reface seats twice and then remove them and replace with new seats. Most of our intakes are cut at a 15-deg angle and our exhaust valves at a 35-deg angle. If an intake seat is widened more than twice when cut on a 15-deg angle it falls heir to many troubles such as accumulation of carbon and hard deposits which prevent the valve from seating properly after a short time in service. A seat that is too narrow may result in overheated valves because of the reduction in heat dissipation.

That's why we replace seats after the second cut and we have found that it is good practice to maintain the seat widths specified by the manufacturer.

Springs Must Be Right

GRANTED that all the other factors are in reasonable condition, the valve spring alone can tear up the whole play house.

Valve springs must have the correct tension. A weak spring is usually the cause of fluttering valves and the valve may not follow the cam because the pressure is insufficient to force the follower against it. Valve stretching can be caused from springs that are too strong.

When valves are removed from the head we use a regular rack to hold

(TURN TO PAGE 178, PLEASE)

Put Your Money on the Thermoid Line

Built for Heavy Duty Service

Thermo-Blocks are made to give you reliable performance under ALL operating conditions, hot or cold, wet or dry—not a compromising adaptation. They last longer and reduce "downtime" maintenance costs.

For heavy duty applications requiring up to ½-inch thick braking materials, Thermoid Custom Built Blocks (CBB Sets) are dual-friction, specially molded.

The Thermoid Line

Brake Linings • Clutch Facings • Fan Belts
Radiator Hose • Hydraulic Brake Parts and Fluid
Car Mats • Thermoid Precision Process Equipment
Complete Brake Service Departments

Thermoid Company, Trenton, New Jersey

"The best investment we ever made"

that's what they say about STAINLESS STEEL trailers

If you want to CUT COSTS ... CUT WEIGHT!

Take advantage of the extra strength of U·S·S Stainless Steel and engineer weight OUT of trailer construction. The almost incredibly light weight that can be attained adds many extra pounds to payload carrying capacity, means extra revenue and extra profits on every freight haul—means lower operating costs on every empty run.

U·S·S Stainless Steel is a perfected, service-tested Stainless that allows a wide latitude in design and permits the employment of the most advanced manufacturing techniques, and it is available for early delivery.

Ask operators of Stainless Steel equipment and you'll get a lot of different reasons why they swear by Stainless construction.

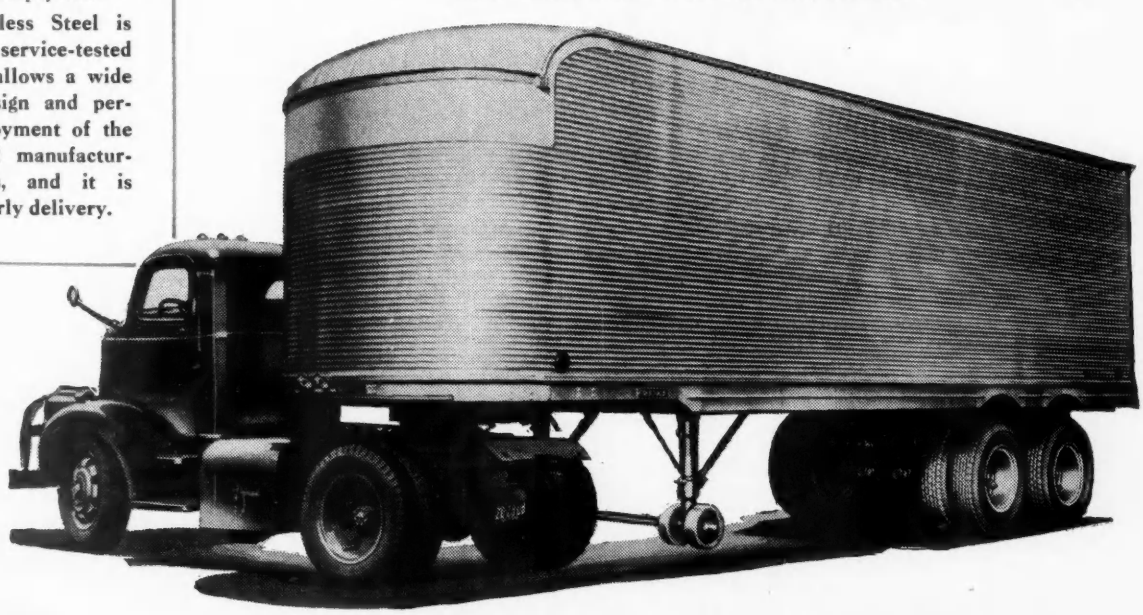
One big operator in Philadelphia says, "We find Stainless Steel units cheaper to operate. They have run approximately 100,000 miles and are just as good as when purchased." Another in Akron, Ohio, states, "Many savings have been effected through the longer life of this construction as it is rust resisting and no yearly painting is required." A famous packer in Chicago has this to say, "The meat business is hard on trailers, due to the chemicals involved in cleaning the units and also because of the brine, salt and ice solutions we use for refrigeration. However, we have experienced practically no corrosion on our Stainless Steel trailers."

But why go on? Stainless Steel gives such money-saving results because it combines maximum strength with maximum corrosion resistance. This makes it possible to get rid of every unnecessary pound of dead weight safely — permits construction that while lighter than ordinary is yet much stronger, and will never be weakened by corrosion.

With Stainless construction you obtain (1) maximum capacity and maximum returns with any type of load, (2) maximum strength that protects driver, load and vehicle, (3) maximum stamina that keeps units longer in service and more available, (4) minimum fuel and oil costs when running empty, and (5) lower license fees. That's why Stainless equipment pays for itself.

If you want to obtain these benefits for your equipment and need practical engineering advice and the latest fabricating data to help you apply U·S·S Stainless Steel, call on us.

AMERICAN STEEL & WIRE COMPANY, GENERAL OFFICES: CLEVELAND, OHIO
CARNEGIE-ILLINOIS STEEL CORPORATION, PITTSBURGH & CHICAGO
COLUMBIA STEEL COMPANY, SAN FRANCISCO · NATIONAL TUBE COMPANY, PITTSBURGH
TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM
UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST
UNITED STATES STEEL EXPORT COMPANY, NEW YORK



U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

8-1630

UNITED STATES STEEL

Valve Troubles?

(CONTINUED FROM PAGE 176)

them and the springs go in the space beneath (Fig. 4). Each spring is tested on a valve spring tester and when a head is reassembled and marked for stock to be used in exchange replacement, we know that every spring has the proper tension and that each valve is in as good condition as it is possible to make it in the shop.

Special Valves

WE have tried many things to increase the life of our valves. Some hard facing deals have not helped our valves much.

We are of the opinion that the sodium-cooled valve when used under our servicing and operating conditions would turn in a good job but the cost of these valves is too much to use in a fleet the size of ours with more than 800 units.

We have tested the rotating valve idea and we are much pleased with its possibilities but a rotating valve must have some positive means of rotating. A valve that rotates without some positive means will likely quit rotating when it gums up or if it is not serviced frequently.

Routine Service

IT goes almost without saying that we check and double check valve and ignition timing and operating temperature of our engines in heavy-duty service so that we at least reached the best operating temperature or slightly exceeded it.

Two things not previously mentioned which have a definite bearing on valve performance and valve life are carburetor and procedure in replacing heads. As with timing, carburetion must be right on the nose. Life of valves is increased immeasurably when air-gasoline mixtures are right.

Heads should be replaced according to manufacturers' recommendations since valve seats can be distorted when a head has been tightened down improperly. We think it best to follow the sequence of tightening head bolts which has been developed by the manufacturer. Regardless of the make of engine or the recommendation of the maker, the principle is to draw the head down evenly.

All systems start somewhere in the center and work around the head so that the pressure is applied evenly all over the head. The final tightening should be done with a torque wrench and bolts tightened to the pressure recommended.

END

(Please resume your reading on P. 70)

"Uni-Liner Process" BRINGS THREE VITAL IMPROVEMENTS!

Insures against leakage and shifting

Resists corrosion and pitting

Reduces wear on moving parts

The cutaway above reveals one of the greatest improvements ever made in hydraulic brake cylinders—the new and exclusive "Uni-Liner Process." Developed and patented by United Parts, the "Uni-Liner Process" lengthens cylinder life and improves cylinder performance in three vital ways. The steel "Uni-Liner," being denser than porous iron, resists damaging corrosion and pitting. Its highly polished surface reduces wear on all moving parts. And its press fit and gravity seal insure against leaking and shifting. Ask your NAPA Jobber for United cylinders made by the "Uni-Liner Process." United Parts Mfg. Co., 1250 W. Van Buren St., Chicago 7.

UNITED

HYDRAULIC BRAKE PARTS • BRAKE CABLES

SPEEDOMETER CABLES • FUEL PUMP PARTS

The 100% COMPLETE *Service* BEARING LINE!

The 100% complete line, almost 7,000 items, everything for your engine bearing needs is available at your Federal-Mogul Jobber today, tomorrow . . . when you need it! A complete line, readily available, over the years has made the Federal-Mogul line the One-Call line—just one call for all your engine bearing needs, from the real old timers to the most modern popular numbers!

FEDERAL-MOGUL SERVICE • COLDWATER, MICHIGAN

Division of Federal-Mogul Corporation

Engine Bearings • Bushings • Connecting Rod Exchange • Reconditioned Connecting Rods • Rebabbitted Connecting Rods

FEDERAL Mogul

• Connecting Rod Bolts and Nuts • V-Seam Piston Pin Bushings • Bearing Metals • Laminated Shims • Solders.

. . . Cleanliness

(CONTINUED FROM PAGE 98)

polished or waxed. Again it is company experience that though such a practice might prolong the paint-repaint cycle, its added cost is not justified by the extended period gained.

Shop Cleanliness

AS mentioned earlier, Abbotts' appearance maintenance goes further than the truck itself. It includes the garage and shop areas, too.

In our milk fleet, for instance, normal schedules call for all trucks except spares to be on the road from early morning until about 2 P.M. when they begin coming in on a staggered schedule. The truck washers come to work about 1 P.M. and their first job is to clean the empty floors. This is accomplished by first hitting the "spots" with a solution of trisodium. This is an all-purpose cleaning agent frequently used in the dairy industry for cleaning milk and ice cream processing equipment as well as floors and general plant fixtures.

Then, in normal weather, the floors are mopped down with a mop dampened in clear water. In bad weather, however, when dirt or slush is brought in by the trucks, the entire floor area may be hosed, since all parking areas are arranged to drain toward the wash rack.

In the repair shop areas each of the two shifts is so scheduled that the last 30 minutes is spent on "pick up." Each and every mechanic, greaseman, helper and stock man has a definite responsibility assigned on a posted sheet. The engine overhaul man, for instance, is responsible for the immediate area of his bench; including tools, parts and debris. Similarly the stock man sees that all is in order, even to the inside of the cabinet for rebuilt carburetors; the floor mechanic puts his tools in a locked drawer and sweeps the area, etc.

Once a day, before the morning shift comes in, the entire shop floor is given the same treatment as the other floors in the garage by a building maintenance man. The result, and this is really no exaggeration, is that if Joe Mechanic's lunch falls off the work bench, he merely picks it off the floor and eats it.

Cost Is Low

HOW much does all this cost? Surprisingly little. Most of the time allotted for "picking up" in the shop comes not so much from actual working time as it does from a period of little production anyway when the men, by instinct, are thinking about going home. Instead of an extra smoke in the washroom just before quitting time, the men have a useful and definite job to do, cleaning up their work area as well as themselves.

The payoff is obvious. By keeping the shop clean there is a better chance of keeping parts clean, too. By knowing where every tool and part not only ought to be but is, a great deal of time is saved. By avoiding accidents from greasy floors and darkly lit areas, lost man-hours are virtually eliminated.

END

(Please resume your reading on P. 109)

MOST COMMON COMPLAINTS

POOR SPRING CONSTRUCTION . . 110
POOR SEAT UPHOLSTERY 118 91%
POOR STITCHING and BINDING . . 82
OTHER 31
TOTAL 341

IN ORIGINAL EQUIPMENT

91% OF SEAT COMPLAINTS CAN BE AVOIDED* by installing

TRAVEL COMFORT CUSHIONS

**The survey from which these figures were taken covered 176 fleets . . . 27,198 vehicles. That's a big sample. And a lot of complaints! Of truck seats commonly used, only 10% were found satisfactory.*

You can avoid the most common faults . . . with a maximum of convenience and economy.

Install McInerney Travel Comfort Cushions. They are engineered to fit your cab design. The cushion spring constructions are developed scientifically for your particular vehicle, then upholstered and covered by expert "tailors" in your choice of materials. All you do is set them in the job.

The construction of Travel Comfort Cushions is *fully* guaranteed. You are assured of finest spring construction, superior upholstery and excellent workmanship throughout. And drivers of your vehicles will enjoy *sustained* comfort because Travel Comfort Cushions are designed to eliminate road shock and thereby lessen riding fatigue.

THE WAY TO BETTER SEATING: McInerney seating engineers will gladly work with you in developing comfortable, trouble-free seating units for your vehicles.

McInerney SPRING & WIRE COMPANY

NOW YOU CAN EFFECTIVELY SHUT OFF FRONT WHEEL BRAKES AND STILL COMPLY WITH ICC RULINGS

Interstate Commerce Commission

Rule No. 3.328 of Motor Carriers Safety Regulations, Revised

"All brakes with which motor vehicles are equipped shall be operative at all times. Means may be used for reducing the braking effort on the front wheels of any bus, truck, or tractor, provided that no such means shall be capable of making the front wheels entirely inoperative."

LIST PRICE
$24.95

Equip with MICO FRONT BRAKE CONTROL!

MEETS WITH INTERSTATE COMMERCE COMMISSION 4-WHEEL BRAKE RULINGS

INSTALLATION IS SIMPLE

The MICO Front Brake Control is a compact, electrically controlled, self-contained safety device—designed to fit any vehicle having hydraulic brakes, with or without boosters. It can be mounted at any place between the master cylinder or booster and the front wheels. Prevent jack-knife action of truck-trailer rigs! Retain steering control!

The Mico Front Brake Control allows approximately 100 pounds pressure *and no more* to be applied to front brakes regardless of pedal pressure or length of time that pedal pressure is applied. An electric dash switch enables driver to cut front wheel brakes on or off with a flick of his finger.

WRITE TODAY FOR SPECIAL OFFER FOR TRIAL UNIT...

MINNESOTA AUTOMOTIVE, INC.
1328 HENNEPIN AVENUE MINNEAPOLIS 3, MINNESOTA

Now... Automatic Fire Protection for trailers by C-O-TWO

TRADE MARK

REG. U.S. PAT. OFF.

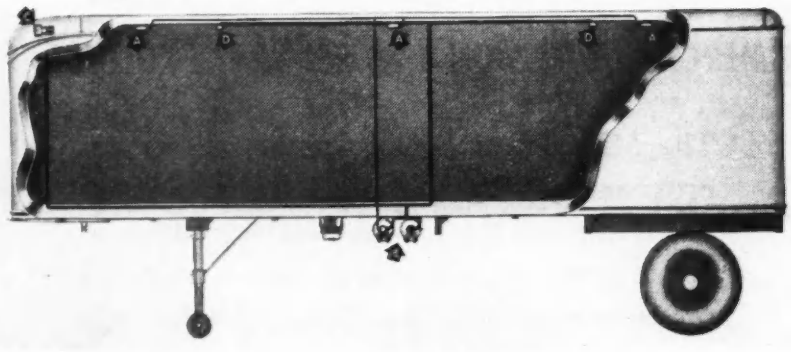
● Your trailers are firesafe 24 hours a day, every day of the year when equipped with a C-O-TWO Automatic Fire Protection System. Remember...fire means loss of equipment, loss of cargo, upset schedules and irate customers.

FOOL-PROOF • SAFE • SIMPLE

Heat detectors on the ceiling of the trailer automatically actuate the fire extinguishing system. Clean, dry, non-damaging carbon dioxide gas is flooded into every nook and corner of the trailer, extinguishing the fire in seconds before it spreads and causes serious damage. After use, the carbon dioxide gas disappears without a trace.

Let an expert C-O-TWO Fire Protection Engineer advise you on your fire protection needs now, before fire strikes. Write today for complete information.

TYPICAL TRAILER INSTALLATION OF A C-O-TWO AUTOMATIC FIRE PROTECTION SYSTEM



A heat detectors
B carbon dioxide cylinders
C alarm siren
D carbon dioxide discharge nozzles

C-O-TWO FIRE EQUIPMENT COMPANY

NEWARK I • NEW JERSEY

Sales and Service in the Principal Cities of United States and Canada

AFFILIATED WITH PYRENE MANUFACTURING COMPANY

Washington Runaround

(CONTINUED FROM PAGE 10)

shipped by freight forwarders "reach their markets by reason of freight absorption and that it runs practically the whole range of less-than-carload commodities."

And so the testimony added up. In practically every case, industry witnesses urged the committee to back legislation which would clearly authorize delivered pricing. As of the moment, Mr. Simon, representing the committee, and Robert Dawkins, representing FTC, are attempting to work out a statement of policy which would clarify the situation. Should such an agreement be reached it would undoubtedly serve as a basis for legislation.

The accession of the Democrats to power should not have any great effect on efforts to reach a solution. Democratic members of the committee have indicated their desire to continue the investigation. And some Democratic leaders have publicly stated that it is their feeling that Congress should act.

Low-Mileage Federal Vehicles

Watch for a strong campaign to reduce the number of motor vehicles operated by the civilian departments of the Federal government. As of June 30, 1948, 80,262 vehicles were being used by civilian agencies as compared with 72,844 a year earlier. Analysis of the annual motor vehicle report, submitted by the agencies for the second time this year, indicates a definite need for reducing the number of vehicles, according to government vehicle experts. During the fiscal year ended June 30, 1948, Federally-operated motor vehicles in the United States were run more than 525 million miles. However, these vehicles averaged only 30 miles each per working day. Not counting replacements, it costs the taxpayer almost $36 million to operate and maintain this 80,000 fleet and supply it with 65 millon gallons of fuel. Government experts want to remove from service and declare surplus many of these low mileage vehicles.

ICC Conference Jan. 12

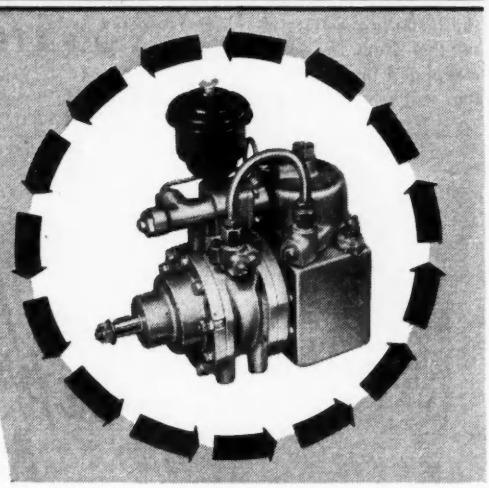
The Section of Safety, Interstate Commerce Commission, Bureau of Motor Carriers will hold its annual conference with truck manufacturers on January 12. The meeting with bus manufacturers will be held the following day. This yearly informal interchange of views has had excellent results relating to design changes in vehicles affecting safety. The agenda for the truck meeting is as follows: the present status of the overall revision of the safety regulations; safety glass standards; wheel flaps for trucks; current brake tests; rear-end collisions; gasoline tank specifications; sleeper cabs; and the responsibility of manufacturers for driveway operations.

(TURN TO PAGE 184, PLEASE)

Wagner Air Brakes

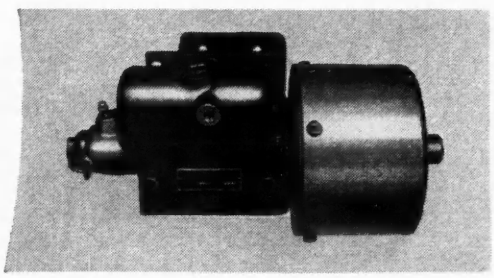
FIRST *In Economy and Reliability*

HERE'S WHY



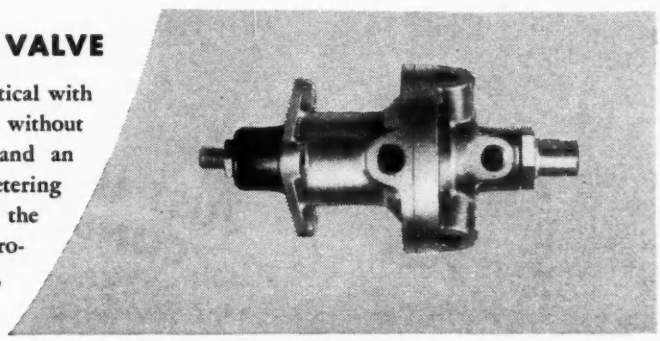
1 THE ONLY SYSTEM WITH THE ROTARY AIR COMPRESSOR

A most important factor in the efficient, safe, economical operation of air brakes is the "heart" of the system—the compressor. That's why Wagner Air Brake Systems include the famous Rotary Air Compressor. This revolutionary type of compressor utilizes the rotary principle and provides a smooth flow of compressed air at all times. Compactly built, it requires minimum space, mounts easily under the hood and can be either belt or direct-driven.



2 THE WAGNER POWER CLUSTER

Another unique feature of Wagner Air Brake Systems. Converts 100 pounds per square inch of air pressure into 1500 pounds per square inch of hydraulic pressure. This unit consists of an air-power cylinder assembled direct to a standard hydraulic master cylinder. No loss due to linkage or friction.



3 THE WAGNER PUSH-TYPE APPLICATION VALVE

The flange mounting on this application valve is identical with that of the master cylinder . . . it is easily installed, without extra drilling. The original pedal linkage is used and an adapter is furnished to connect the valve. The metering characteristics of the push-type valve are such that the air pressure admitted to the power cylinder is in proportion to the foot pressure applied on the brake pedal, assuring smooth deceleration.

These are only a few reasons . . . *Write for Complete Information*

Safety is the watchword of the automotive industry and you can get brake safety and efficiency on every vehicle in your fleet by installing Wagner Air Brakes. They are available in systems to meet every requirement. Write today for your copy of Bulletin KU-50B.

Wagner Electric Corporation

6470 Plymouth Ave., St. Louis 14, Mo., U.S.A.

Wagner Electric Corporation EST. WE 1891

LOCKHEED HYDRAULIC BRAKE PARTS and FLUID · NoRot CoMax BRAKE LINING · AIR BRAKES · TACHOGRAPHS ELECTRIC MOTORS · TRANSFORMERS · INDUSTRIAL BRAKES

The System With The Rotary Compressor

K49-1A

Washington Runaround

(CONTINUED FROM PAGE 182)

PRA Begins Brake Tests

The Public Roads Administration with the assistance of the Advisory Committee of Motor Vehicle Brake Research will begin a series of brake tests on the West Coast late this month. The first phase of the tests, brake tests of vehicles selected at random from the general traffic, has been completed in Maryland. This type of testing will also be conducted on the West Coast; however, PRA experts, headed by Carl Saal, will also begin the second phase, controlled tests in cooperation with fleet operators. Sometime during the summer months the first two phases of the tests will get under way in the mid-West and finally the controlled tests will be held in the East. The third phase, tests on new vehicles, is being conducted by the Automobile Manufacturers Association. Reports on the individual phases of the program will be released as they are completed.

Preliminary Results of Pa. Test

A tentative report of the Committee on Economics of Motor Vehicle Size and Weight in the form of a sound motion picture of the Pennsylvania Pilot Study was presented at the December meeting of the Highway Research Board. The motion picture includes some animation of selected partial and preliminary results of the tests intended only to provide examples of the kinds of data obtained and of the manner in which they may be used. Also released were two charts showing some of the more generalized preliminary trends of the Pilot Study which afforded an overall comparison of travel time and fuel consumption on the two contrasting testing routes.

New ICC Accident Forms

The Interstate Commerce Commission last month issued its new accident report forms. Form BMC 50-T is for truck operators and BMC 50-B for bus operators. Simplification was the major objective of the group which drafted the new forms. Supplies of the forms may be obtained from the Bureau of Motor Carriers, Interstate Commerce Commission, Washington 25, D. C., or from any district superviser of the ICC.

Washington Miscellany

The Interstate Commerce Commission is getting set to prohibit the transportation of explosives in full trailers. This prohibition was lifted in the early war years to permit movements in full trailers by and for the armed services . . . Truck trailer production during October, as reported by the Bureau of the Census, amounted to 3,725 units, as compared with 3,594 units the previous month. Production for the first ten months of 1948 totals 37,192 units . . . An ICC examiner last month recommended that the Commission's rule prohibiting amputees from driving motor carrier vehicles in interstate commerce remain unchanged. The examiner found that there was no showing of substantial need for revision of the rule . . . Walter S. Rainville, Jr., director of research for the American Transit Association, has been appointed consultant to the National Security Resources Board on transportation mobilization problems.

END

(Please resume your reading on P. 14)

Quiz Answers

(See page 30)

1—40,000,000 registrations
2—400 billion miles
3—50,500,000 licensed drivers
4—8,800,000 persons
5—5,200,000 persons
6—one-fifth
7—$2,500,000,000.00
8—1—Livestock (5) 52%
2—Live Poultry (4) 66%
3—Vegetables (3) 42%
4—Milk (1) 65%
5—Eggs (2) 93%
9—$3,000,000,000.00
10—30,000,000,000 gal.

Puddle Trouble?

NOT for the 3 million windshields washed by TRICO'S "Two Little Squirts"

It's the busiest time of the year for Trico's "Two Little Squirts" when cars and trucks splash through slush and mud.

Thousands of drivers of trucks...individually owned and in fleets...keep their windshields crystal clear with the touch of a button, no matter how frequently splattered.

Trico Automatic Windshield Washers can be quickly and easily installed at low cost on nearly all types of trucks and buses...old or new.

Trico Windshield Washer Solvent is available for cold-weather use.

TRICO

TRICO PRODUCTS CORPORATION, BUFFALO 3, N. Y.

Windshield Washers

Fully Automatic...Nothing to Pump

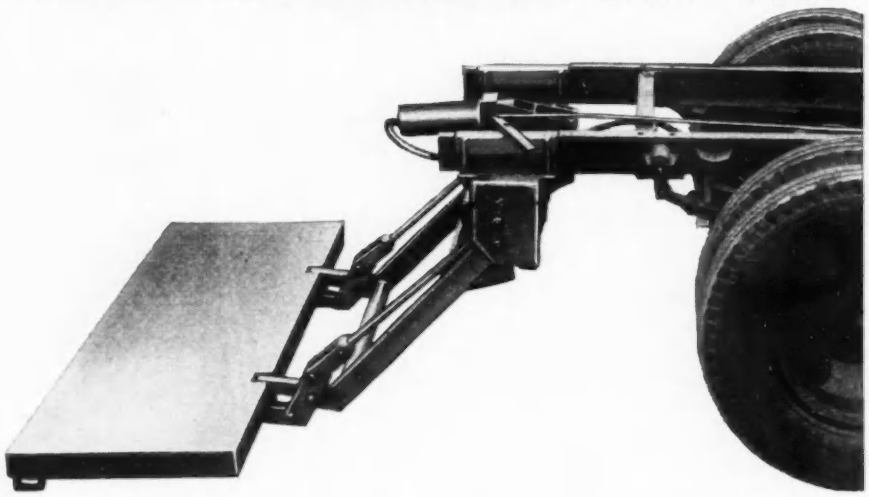
. . . H. L. CLARK, as assistant general sales manager of Federal Motor Truck Co.

. . . EMMETT A. DARBY, as Oklahoma City Branch Manager for the White Motor Co.

. . . ROBERT M. HAYS, as sales manager of the Trailer Axle Division of The Timken-Detroit Axle Co.

. . . HARRY A. LAGEMAN, as manager of distributor sales for The Trailmobile Co.

WANT TO INCREASE THE "PAY"



. . . IN YOUR PAY-LOAD?

Install a Cemco Hydraul-lift Tailgate—let the truck motor do the lifting or lowering between ground and truck bed. One man can operate it! Reduce your labor costs—personal injuries, claims, breakage. Improve labor relations.

Fits any truck—new or old. Can now be installed on semi-trailer bodies as well as standard trucks.

A CEMCO GATE HAS LESS WEIGHT!

Complete unit, including all mounting accessories, weighs only 733 pounds. Yet it lifts up to one ton! Less weight means more payload. Safe—dependable!

Write for the name of dealer nearest you, Dept. C.

CEMCO INDUSTRIES, INC.,
GALION, OHIO

. . . M. G. HUNTINGTON as general manager of the Associated Lines Sales Division, The B. F. Goodrich Co., succeeding CHESTER E. CARROLL, retired.

. . . ROYAL R. MCLEESE as manager, Automotive Replacement Div., Dayton Rubber Co., succeeding WILLIAM MARTEL, resigned.

. . . WM. D. MORGAN as sales representative in Toledo Steel Product Co.'s Southern Division. He comes from Chevrolet Parts Div. in Richmond, Va.

. . . JOSEPH S. SHERER, JR., as president and general manager of Reo Motors, Inc., succeeding HENRY E. HUND, now chairman of the board. JAMES J. DERVIN succeeds Mr. Sherer as vice-president and assistant general manager.

. . . WM. F. ROGGE, as manager of replacement sales for World Bestos Corp.

. . . V. P. BRESAN, as general sales manager of Radiator Specialty Co., Charlotte, N. C.

. . . JAMES J. FLASCO, as St. Louis branch sales manager for the General Tire & Rubber Co.

. . . FRANK R. SOMERS, as vice-president in charge of sales for Willard Storage Battery Co. Other new Willard appointments include: HERBERT A. FOTHERINGHAM, as advertising service manager; DONALD I. EHLENFELDT, as manager of sales promotion, and WILLIAM H. WALTER, as manager of market research.

. . . WILLIAM V. DYKE as manager of distributor sales for Blackhawk Mfg. Co.

. . . EDW. P. LETSCHER (left) and LYNN P. JONES as Dodge Division regional managers in Greensboro and Atlanta.

(TURN TO PAGE 188, PLEASE)

Dependability pays off!

The consistently *dependable performance* of Ditz-Lac Lacquers and Ditzco Enamels is the chief reason why Ditzler has grown to be the largest *exclusive* producer of automotive finishes. They must be good to be so widely used by the motor car industry. As a result of this unequalled acceptance and experience, Ditzler is best qualified to supply high quality products for refinishing automotive equipment.

DITZLER'S RIP RAP ideal Primer Surfacer

● Famous for good adhesion, exceptional filling properties, easy sanding and excellent hold-out. Rip Rap dries fast and feather edges to a mere shadow without cracking or crumbling. It is an ideal undercoat for lacquers and also works well under enamels. Rip Rap is available in Neutral Gray, Dark Gray, Red Oxide and White. Ditzler Color Division, Pittsburgh Plate Glass Company, Detroit 4, Michigan.

DITZLER

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

Introducing . . .

(CONTINUED FROM PAGE 186)

. . . ARTHUR L. RIKLIN, as advertising and public relations director for Standard Electric Co., Inc.

. . . The following district managers for Replacement Tire Sales Division of The B. F. Goodrich Co.: WILLIAM R. DAKAN, San Francisco; ORRIEN K. LYNN, Seattle, and THOMAS C. YARNALL, Detroit.

. . . The following branch managers of the General Tire & Rubber Co.: EARL H. SCHAUB, Denver; WILLIAM W. FERGUSSON, Buffalo; RICHARD GRAYBILL, New York; JOHN W. BOGLE, Richmond; and JAMES J. FLASCO, St. Louis.

. . . LOUIS C. WOLFF, as director of safety for Terminal Transport Co., Indianapolis.

. . . HARRY W. JULIAN, as assistant sales manager of Seiberling Rubber Co.

. . . ABBOTT L. JOHNSON, as president and general manager of the Asbestos Manufacturing Co., Huntington, Ind.

. . . JOHN J. NOPPER, as sales promotion manager for The AP Parts Corp.

. . . S. W. CLEMENT, as southeastern district manager with headquarters in Atlanta, for Black Mfg. Co., Baltimore, Md.

. . . D. A. HUTCHESON named general sales manager of Sterling Tool Products Co.

. . . WILLIAM H. BEAN, former maintenance engineer for the Third Avenue Transit System, as head of the Mil-Jay Sales Co., New York, N. Y.

. . . GERALD J. KLOPFENSTEIN, as assistant to the vice-president and director of sales and JAMES E. DOELLING, as manager of the meter sales division of Bowser, Inc., Fort Wayne, Ind.

. . . ROBERT C. ARTNER, as vice-president and general manager of The Midland Steel Products Co.

. . . SELDEN T. WILLIAMS, vice-president of Scovill Manufacturing Co., Inc., now general manager of A. Schrader's Son Division.

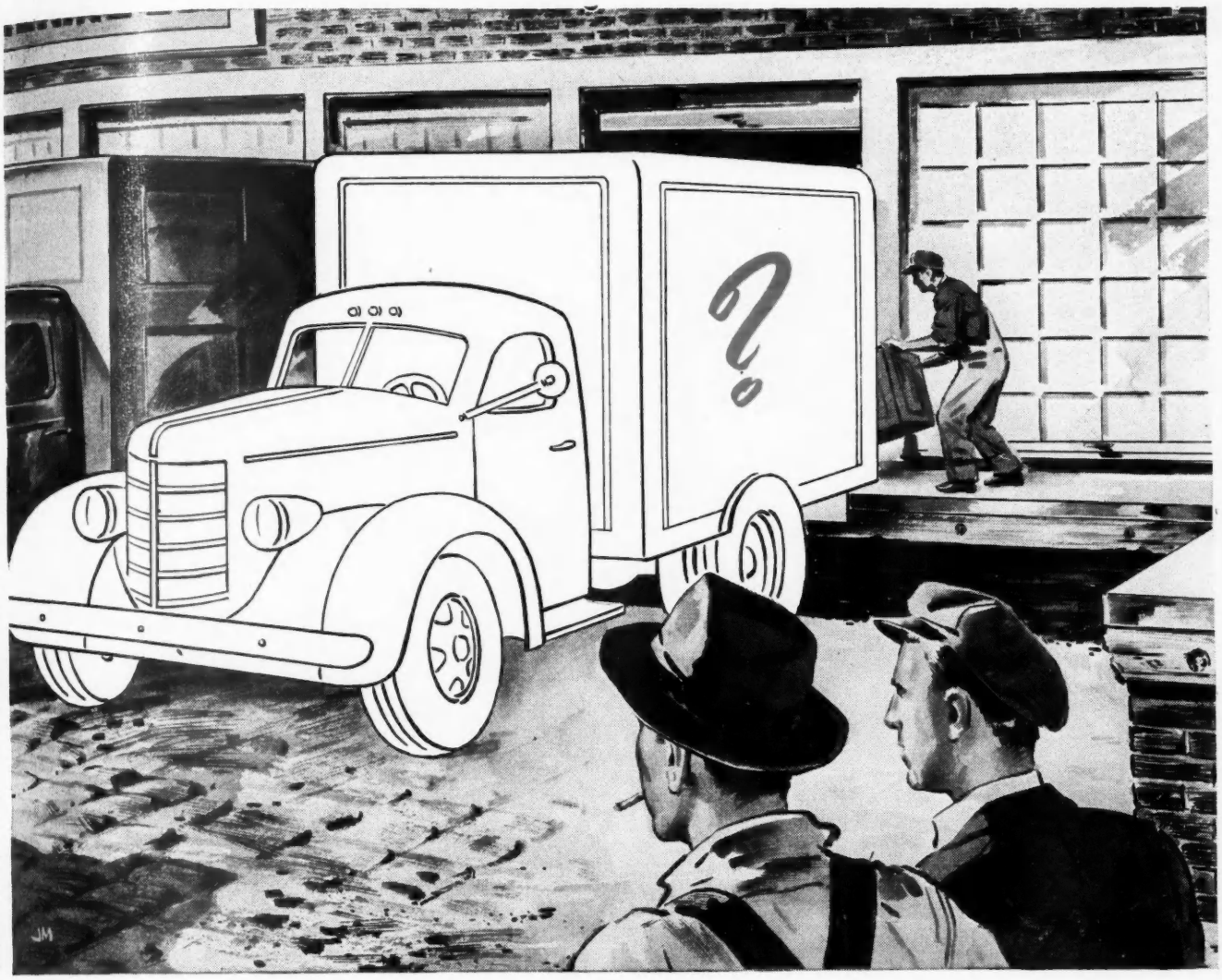
. . . GERRY H. LOCKNER, transportation and safety engineer for the Eagle, Globe and Royal Indemnity Companies, Los Angeles, now on the staff of the American Trucking Association, Inc., as a field representative in Oregon and Washington.

. . . HERBERT E. SMITH, as chairman of the board and chief executive officer of United States Rubber Co., and HARRY E. HUMPHREYS, JR., as president and chairman of the executive committee. ARTHUR SURKAMP is now vice-president and chair-

(TURN TO PAGE 190, PLEASE)

Particularly Suited—
for REFRIGERATOR
AND VAN BODIES
Clamptite Door Lock
No. 5628
EberHARDWARE
is "PURPOSE-TESTED"
Equally adaptable for use on single doors or end gates, the CLAMPTITE lock can be applied with three keepers as shown or with two keepers for shorter doors.
Handle furnished with built-in lock cylinder or padlock eyes.
Sufficient leverage in lock action to clamp door tight and break frost seal upon opening.
Write for latest Eberhard Catalog 13-B.
EBERHARD Long Run
TRUCK BODY FITTINGS
E
EBERHARD MANUFACTURING CO.
Division of the Eastern Malleable Iron Co., 2734 TENNYSON ROAD. CLEVELAND, OHIO

"We got him from an employment agency—they were having a clearance."



Your product may look good...but how about your trucks?

You take pride in your product's appearance. But are you careful enough about the appearance of your fleet? Shabby, neglected-looking trucks can injure your company's reputation by creating an unfavorable public impression. Keep your trucks looking bright and attractive . . . you'll be helping yourself to more customer goodwill.

Good-looking, hard-working fleets need finishes that are tough. That's why Du Pont DULUX Enamel figures in so many maintenance schedules today. Day in, day out . . . month after month . . . its initial full-gloss beauty *holds* despite stains, weathering, and hard knocks. The result: less paint-shop "down time" and lighter maintenance expenses. From start to finish . . . use Du Pont finishes. E. I. du Pont de Nemours & Co. (Inc.), Refinish Sales, Wilmington 98, Delaware.

FOR A COMPLETE JOB—Du Pont Preparakote, the primer that *fills*, is specially formulated to work with DULUX. It goes on easily, dries fast, and stays put! From start to *finish* . . . use Du Pont finishes.

DU PONT
REG. U. S. PAT. OFF.
DULUX
REG. U. S. PAT. OFF.
ENAMEL
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

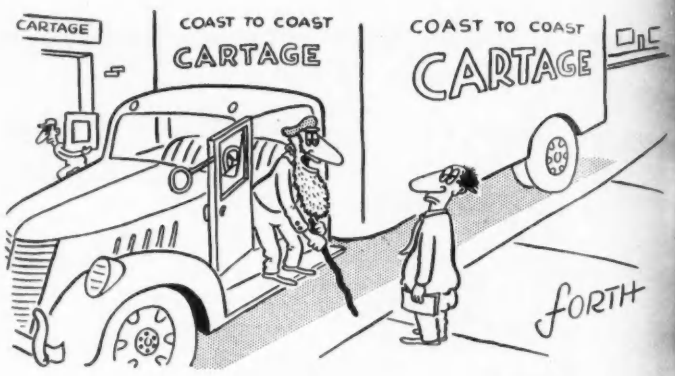
Introducing . . .

(CONTINUED FROM PAGE 188)

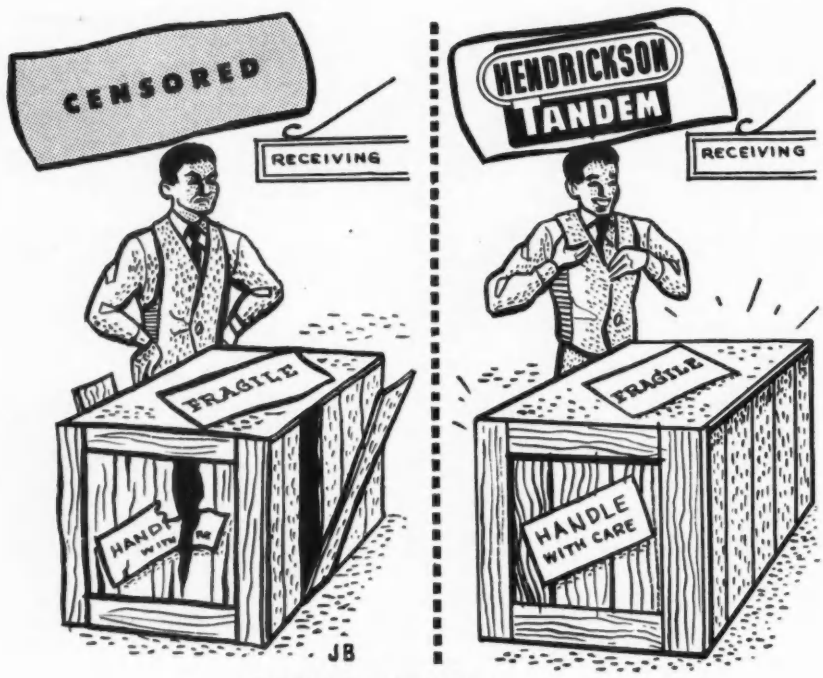
man of the finance committee, while HERBERT M. KELTON was elected treasurer.

. . . KENT W. FULLER, JR., as New York territory salesman for the Pennsylvania Rubber Co.

. . . The following district mangers of The Lincoln Electric Co. C. W. LYTTON, Buffalo; C. M. RICHARDSON, Franklin, Pa., and RAY ZEH, Toledo.



"Good gosh, that sure was a long haul."



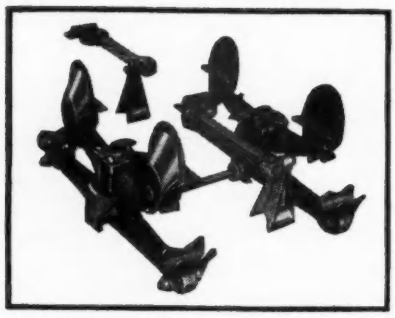
SAME ROAD

SAME HAUL ------

SAME CARGO

BUT THERE'S A DIFFERENCE IN TANDEMS

CUSTOMERS PREFER a Hendrickson-equipped rig for delivery of their goods. The Hendrickson equalizing beam and ball and socket joint construction permit absorption of shocks and jars—eliminating damage to shipment in transit.



HENDRICKSON MOTOR TRUCK COMPANY

8001 W. 47th Street, Lyons (Chicago Suburb), Illinois

Follow the Leader!

. . . RUSSELL D. LUND, Chicago industrial editor, named regional representative of the National Highway Users Conference in the states of Illinois, Indiana, Ohio, Michigan and Wisconsin.

. . . CHARLES E. SLITER, as direct factory representative for Wix Accessories Corp., Gastonia, N. C., in western Pennsylvania and New York State, excluding Metropolitan New York City.

. . . ROBERT GRAY, technical service engineer, The Leece-Neville Co.

. . . M. G. MCGREGOR, sales manager, Ahlberg Bearing Co. of Chicago.

. . . E. W. IMAN, promoted to sales manager of the Lubricating Equipment Division, The Aro Equipment Co.

. . . ARTHUR R. COLLINS, as general manager of Stewart Warner Corp.'s Division III, the "South Wind" heating equipment unit at Indianapolis. E. G. FOSSUM has been appointed as assistant to President Knowlson.

. . . B. B. ROHL, Lansing, Mich., as exclusive State Representative for Detroit Automotive Products Corp.'s NoSPIN Differentials.

. . . A. D. MOORE, as representative in lower Indiana and southwest Ohio for Cole-Hersee Co.

. . . MARK ALBERT, as district manager in Colorado, Utah, and Wyoming; and HARRY CONVERSE, as district manager in Southern California and Arizona, both for Standard Motor Products, Inc.

. . . HAROLD S. ROBERTS, as safety director of the Pennsylvania Motor Truck Association.

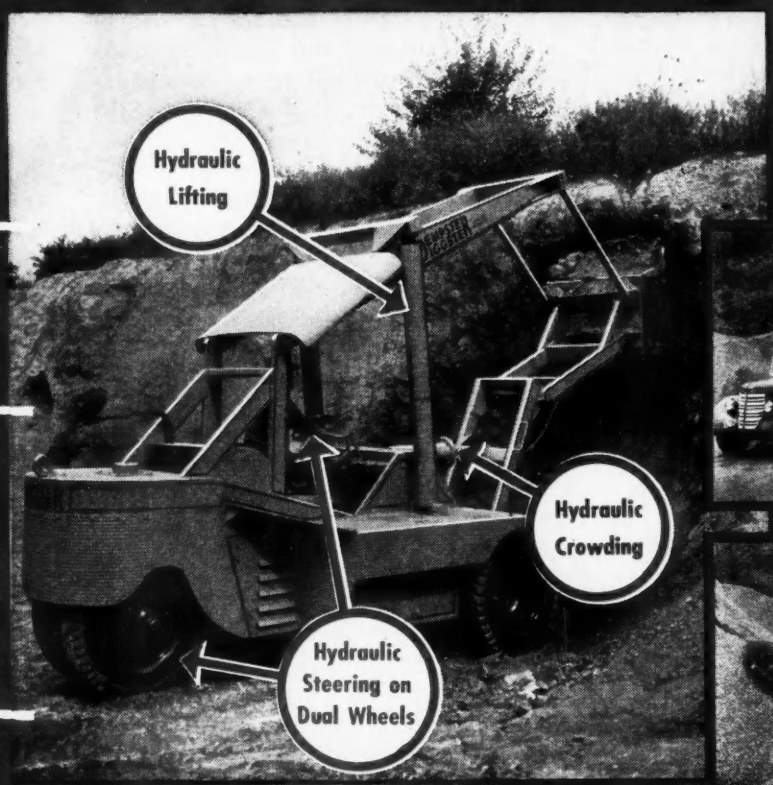
. . . ROYAL R. MCLEESE, as manager, Automotive V-Belt Replacement Division of the Dayton Rubber Co.

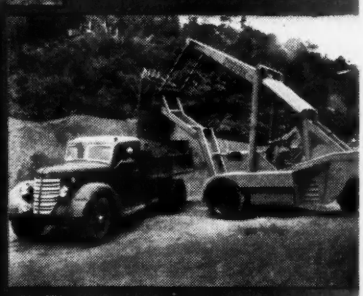
. . . BASIL J. BARKEY, as sales manager of Federal-Mogul Service, division of Federal-Mogul Corp. THOMAS L. CAMP becomes supervisor of districts and D. W. HERR and R. K. MCCONNELL have been appointed to the executive sales staff.

. . . H. S. DAHLEEN, as manager of automotive sales division, Franklin Transformer Mfg. Co., Minneapolis.

. . . FRANK W. DOYLE and RALPH W. GOETZ, named assistant sales managers, the Radiator Division of the Perfex Corp., Milwaukee, Wis.

fast
mobile
easy to
operate





Dempster-Diggster

Has VICKERS HYDRAULIC CONTROLS

High speed versatility (as exemplified by the Dempster-Diggster) is characteristic of Vickers Hydraulic Controls.

Vickers Hydraulic Power Steering Booster makes it easier to steer the Dempster-Diggster over rough terrain, than a passenger car on smooth pavement. Steering load is carried by hydraulic cylinder . . . not by the driver.

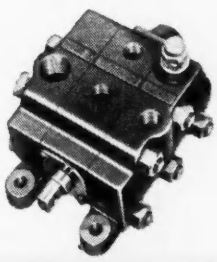
Vickers Balanced Vane Type Pumps supply oil under pressure also for actuating cylinders that lift and crowd the dipper. These pumps are exceptionally efficient and dependable; their exclusive hydraulic balance construction prolongs pump life by entirely eliminating pressure-induced loads and consequent wear.

Overload protection for the machine is provided by relief valves integral with Vickers Steering Booster and Valves. Write for descriptive bulletins.

Vickers Improved Hydraulic Steering Booster with integral overload relief valve. See Bulletin 47-30a.

Vickers Balanced Vane Type Pumps are engine driven. See Bulletin 36-12.

Vickers "Multiple Unit" Valves include relief valve for overload protection. See Bulletin 40-13.



VICKERS Incorporated
DIVISION OF THE SPERRY CORPORATION

Application Engineering Offices:
ATLANTA • CHICAGO • CINCINNATI • CLEVELAND • DETROIT
LOS ANGELES • NEWARK • PHILADELPHIA • PITTSBURGH • ROCHESTER
ROCKFORD • ST. LOUIS • SEATTLE • TULSA • WASHINGTON • WORCESTER

ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921

Piston Resizing

(CONTINUED FROM PAGE 93)

The cost of having the piston Koetherized varies with the type of piston and the locality. Price can best be determined by contacting the local American Hammered piston ring distributor.

Pedrick Thermo-Sizer

The Thermo-Sizing operation consists of two essential stages. In the first, the piston is brought up to a temperature of 650 to 750 deg at which the structure of the aluminum alloy is changed to an amorphous or soft state. In this condition, the material can be stretched and permanently set without taking any chance of producing local fractures.

In the second, the resizing operation consists of stretching the material in a special vise to the desired size. The piston skirts are resized uniformly at the top and bottom. With the completion of this operation, the piston starts to age harden which brings it back to the original hard state within a period of 48 hrs. The sizing operation is, therefore, permanent. The piston is completely stress-relieved at the end of the operation in its resized state. The resizing operation does not damage the surface layer material.

All worn pistons should be resized to provide the piston cylinder clearance specified by the manufacturer. With split skirt pistons and cylinder tapers of more than .004, the piston may be resized to less than manufacturers' piston clearance at the bottom of the stroke.

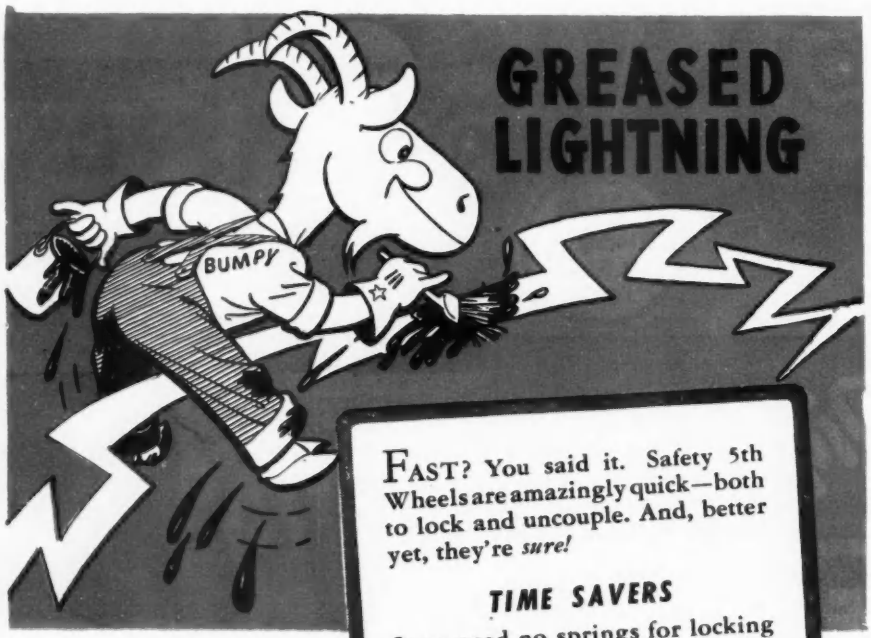
Any skilled engine mechanic is able to operate the Thermo-Sizer after several hours of practice. Jobber establishments where machine shops are operated are better suited to the job of resizing pistons properly. Also, usually it is a much more economical service for the jobber to render them for the average trade outlet because the best equipment involves a fair investment and a reasonable volume of piston resizing is required to keep it profitably engaged. However, large service shops with skilled mechanics and adequate instruments for correct measuring of engine parts can handle resizing of pistons on their own. This machine is a product of Wilkening Mfg. Co.

The Moog Dynamizer

A combination of pressure and heat, controlled by a metering rod and dial gage is a feature of the Moog Dynamizer method of expanding pistons. A universal piston holder catches a piston on the outside with two jaws along the piston pin hole side of the piston with varying amounts of pressure. The jaws on the piston holder keep the piston from expanding toward the pin holes, (or the way you don't want the piston to go) and force it to expand to the larger or the "slap" side of the piston. The heat is applied to the head of the piston and finally quenched for "setting" at the desired amount of expansion.

The piston expanding machine works wholly on the outside of the piston on a machined surface, leaving all those inside obstructions alone

(TURN TO PAGE 194, PLEASE)



FAST? You said it. Safety 5th Wheels are amazingly quick—both to lock and uncouple. And, better yet, they're *sure!*

TIME SAVERS

Jaws need no springs for locking . . . *stay* locked . . . unlock with a single one-hand movement. In all positions, in all weather, the patented operating principle saves time for *both* tractors and drivers.

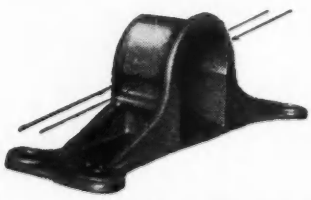
SAFE AND STRONG

Speed in pick-up and uncoupling. Safety that stays *safe*. Stamina for the toughest, roughest use. These are things that 40 years of railroad coupler experience has built into this better, *safer* wheel.

DO THIS

Put Safety 5th Wheels on the next tractors you buy. You'll *like* them. Automotive Division, American Steel Foundries, 400 N. Michigan Ave., Chicago 11, Illinois.

The new Series 400-C. Dealers and distributors wherever you go.



Sockets on the plate fit well down over the trunnions so that tractor *pull* is transmitted in a *straight line*. Plate won't "lift" under power or braking.

A·S·F Safety 5th WHEEL

"No Scoring or Heat Checks..." with WORLD BESTOS Brake Blocks

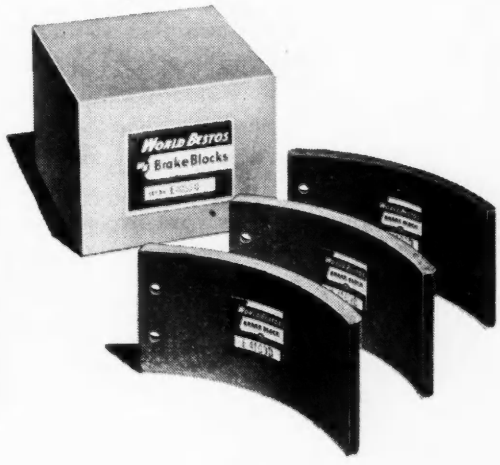
"Excellent braking efficiency . . . Low cost per mile"

Hennis Freight Lines, Inc., of Winston-Salem, N. C., operates 52 tandems and over 100 tractor-trailer combinations throughout North and South Carolina, Virginia, Ohio, Indiana, Michigan and Illinois. This large-scale operator has standardized on World Bestos Brake Blocks because they give top performance and economy where the going's toughest.

"Under the hardest conditions, World Bestos Blocks give us excellent braking efficiency," writes Mr. Dewey Ferguson, Maintenance Manager of Hennis Lines. "Since switching to these blocks over two years ago we have experienced practically no scoring or heat checks. Drums last longer, an important consideration these days. All the way through, World Bestos Blocks give us better performance and substantially lower costs per mile."

There's good reason why World Bestos Brake Blocks are taking over the tough jobs. Face and body are composed of independent compounds in the World Bestos Balanced Crystal Structure. Made to withstand high temperatures usually disastrous to ordinary linings, these blocks wear slowly in even the most severe service while providing a stable, resilient friction under all operating heats and pressures. Constant, positive control is thus assured, with virtual freedom from fading, drum scoring or heat checking.

For first-hand proof of their performance, reline with a set of World Bestos Brake Blocks and compare them to those you now use.



BRAKE LININGS BRAKE BLOCKS

WORLD BESTOS CORP.

NEW CASTLE, INDIANA

Piston Resizing

(CONTINUED FROM PAGE 192)

and also leaves off alterations.

Resizing pistons with the Moog Dynamizing method takes out crystalization on aluminum alloy pistons. It also gets pistons that are tin plated hot enough to cause the tin to blister in small pin point forms, but this can easily be touched off with a sheet of emery cloth. Blistering tin plated pistons, to this point, is a definite advantage from the point of selling this service, because it has been proved that it does not get hot enough to damage the tin and it also proves that you get the piston hotter with this process of expanding than it gets when you are running the piston in the engine of the proper temperature, which means in normal motor use it will not collapse.

The Moog Dynamizer is put out on a lease basis and has no list and net prices.

Zenith

ZIP nstruction rogram

SPEEDS UP

carburetor repairs and maintenance

The plan has two phases—thorough instruction of your men by carburetion experts, and the Zenith* Package Repair Kit which contains all necessary parts and service directions. Your Zenith distributor is the man to see. Ask him about his streamlined training course for your men, and also about supplying you the Kits to speed and improve the carburetion part of your maintenance problem. Contact him or the factory direct for further information.

*REG. U.S. PAT. OFF.

ZENITH CARBURETOR
696 HART AVENUE • DETROIT 14, MICHIGAN

DIVISION OF Bendix AVIATION CORPORATION

The Ramsay Ramconizer

The Ramconizer uses the peening hammer method of resizing delivering a series of controlled rapid blows. This works the metal according to one of the oldest methods known for cold working and refining of metals to better prepare it against hard usage

The piston is firmly clamped in an adjustable cam-shaped steel sleeve which controls the amount of expansion by providing solid backing opposite the points of hammer contact. Also since a short stroke is used on the scientifically engineered ball point hammer it will deliver the type of peening blow at the hard-to-get-at places.

Ramconizers are not sold outright but are put out on a monthly rental basis. They rent for $7.50 per month net for the first three years and at $24.00 per year net after three years. Ramsey Corp. will provide additional details.

The Perfect Circle Nurlizer

The Nurlizing process developed by the Perfect Circle Corp. for sizing new and used pistons improves piston skirt scuff resistance. The surface produced by this process is an "interrupted surface," having greater load carrying capacity and greater resistance to scuffing and scoring than a smooth surface.

Nurlizing, by reducing piston to cylinder clearance, increases piston stability, thus decreasing oil consumption and blowby and increasing piston ring life and over-all engine performance.

(TURN TO PAGE 197, PLEASE)

Piston Resizing

(CONTINUED FROM PAGE 194)

When a surface is knurled with the Perfect Circle machine the tooling edges of the knurling wheel displace metal which "rises" into the space between adjacent tooling edges. This displacement is permanent in that the elastic limit of the surface material has been exceeded.

Nurlizing can be very closely controlled—plus or minus half a thousandth. It is permanent and does not set up strains in the piston. With Nurlizing, the piston skirt diameter can be increased at any desired point —so that a desired taper can be applied to the skirt. The skirt diameter increase is obtained without otherwise altering the shape of the piston. Nurlizing provides an interrupted surface—thus the piston skirts run cooler, have greater load carrying capacity and greater resistance to scuffing.

The Nurlizer will handle pistons from 2 to 5½ in. diameter.

Nurlizers are put out on a lease basis with the charge based on a flat rate per piston with a minimum monthly charge.

McQuay-Norris Permasizer

The Permasizer is a machine for expanding used pistons, iron and steel as well as alloy, to the proper size for the worn cylinder through the use of an electric furnace. This process makes use of an internal expanding tool of special hardened, stainless steel that allows the expansion of the complete skirt of the piston. The Permasizer method involves heating the piston for a protracted time internal and then quenching in water. With this machine it is possible to restore the original cam shape of the piston.

The operation is said to be fast, accurate, permanent and economical. A piston resized by this method assumes permanent shape and will not collapse. Permasized pistons eliminate piston slap and make it possible for piston rings to give the best performance.

Naturally resizing does not make a piston new, but on a re-ring job if the lands are not cracked or worn or even if the worn top grooves can be widened by a machining operation to take a groove filler, then there is a saving to be realized from expanding the used pistons to compensate for skirt wear and cylinder wear. This stabilizes the rings so they will run square with the cylinder wall. The permanent set obtained with this method permits an additional service

(TURN TO PAGE 198, PLEASE)

"More appropriate, don't you think?"

To the Man Responsible for Protecting Vehicles and Premises *against fire*

WITH replacement costs soaring, your responsibility becomes greater than ever. It's time to double check fire-fighting equipment in every vehicle, in every garage location.

Is every vulnerable point covered, and by the right type of extinguisher? . . . . Is every extinguisher freshly charged, ready for instant action?

There is a size and type of Buffalo *better-built* Fire Extinguisher exactly suited to every fire hazard. Your thoroughly-trained Buffalo representative will be glad to check with you and make recommendations if you need additional equipment. If he isn't listed in the classified section of your telephone directory, please write us direct.

BUFFALO better-built FIRE EXTINGUISHERS

BUFFALO FIRE APPLIANCE CORPORATION
DAYTON 1, OHIO
EST. 1895

Piston Resizing

(CONTINUED FROM PAGE 197)

period from old pistons during which the new piston rings are able to perform efficiently. Additional details are available from McQuay-Norris.

The Hastings Micro-Knurler

The electrically-operated Micro-Knurler developed by Hastings offers a quick, precision piston knurling service for fleets. Micro-Knurling increases the diameter of the piston by raising metal on the major and minor thrust surfaces of the piston skirts. The process eliminates piston slap, provides added wall lubrication because of the knurled area and increases the life of the piston as well as the rings and cylinder walls.

This machine handles all types and sizes of pistons by means of a universal chuck which locks the piston in place from the outside. Inside irregularities do not matter, according to the company. The Micro-Knurler will resize heavy-duty pistons in about 2 min with passenger car pistons taking slightly less time.

The machine has been distributed to Hastings jobbers for convenient fleet accommodation.

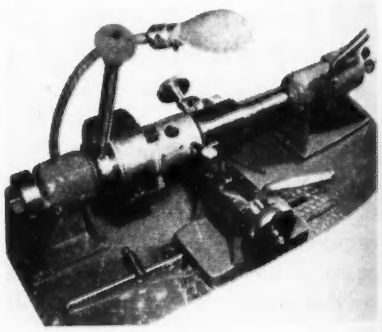
The Watervliet Resizer

The Watervliet Pneumatic Piston Resizer expands and reshapes pistons without adding weight, to compensate for wear and collapse. The 8000 light blows a minute permit controlled expansion, enabling the operator to custom fit each piston to its cylinder. This machine is sold outright. Manufactured by the Watervliet Tool Co., Albany, N. Y.

Wausau's "Precisionurl"

A new method of piston resizing by the Wausau Motor Parts Co. employs the "Precisionurl."

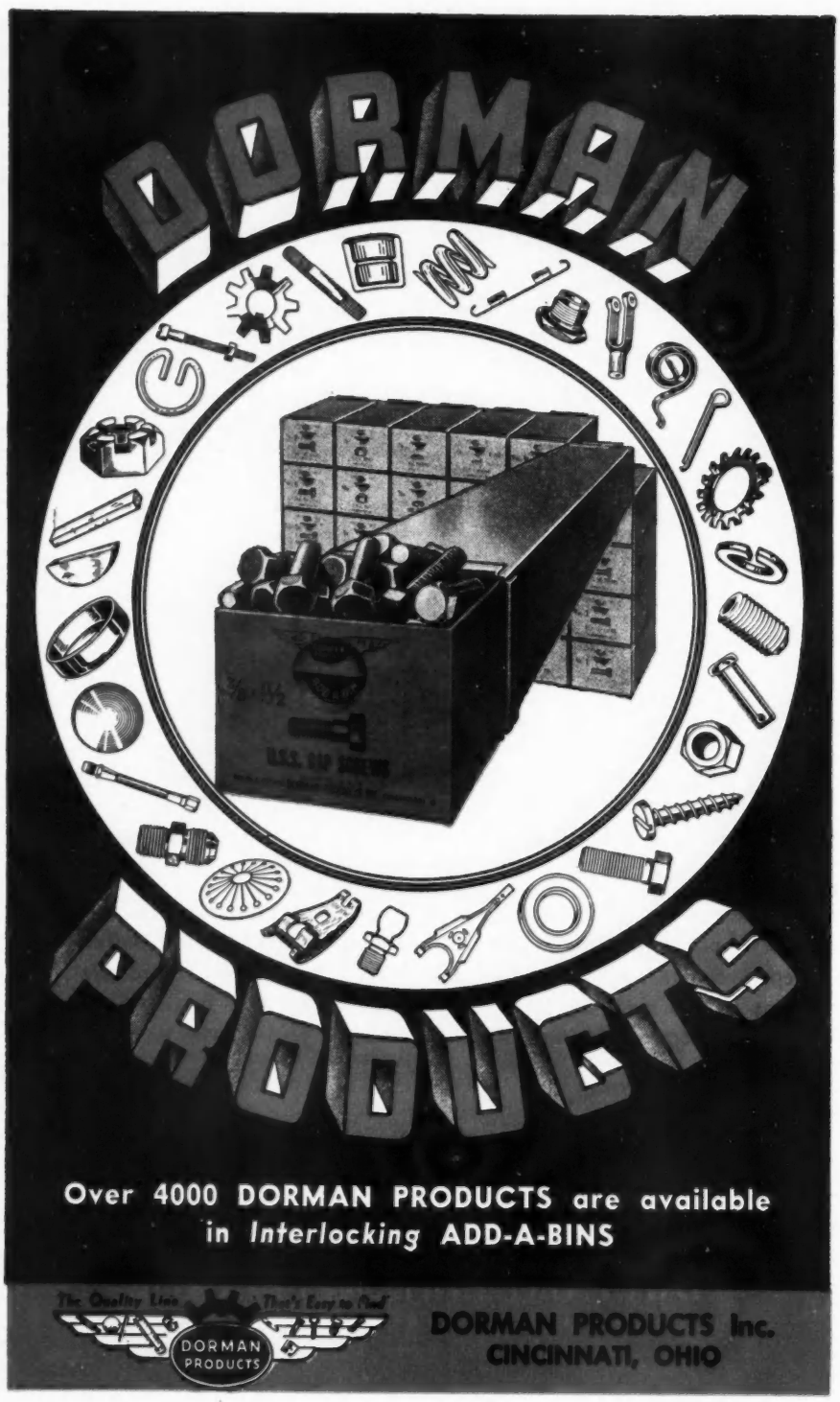
The "Precisionurl" resizes a piston by knurling the surface. The knurling is done by a special metered-feed knurling wheel which contacts the piston as the latter rotates in contact with the wheel. The amount of rotation, the degree of knurling pressure and the point of contract of wheel and piston are all under very close



control of the operator, eliminating guess work and bringing the operation to a point of high precision. Built-in jeweled dial gage measures the amount of expansion as it is being actually produced in the piston, thus eliminating any possibility of over or under expanding. The knurling raises the surface of the piston in direct proportion to the amount and depth of metal displaced by the knurling impression. No percussion, heat, or strain is employed in obtaining the amount of expansion desired, and pistons are said to maintain their expansion indefinitely.

END

(Please resume your reading on P. 94)



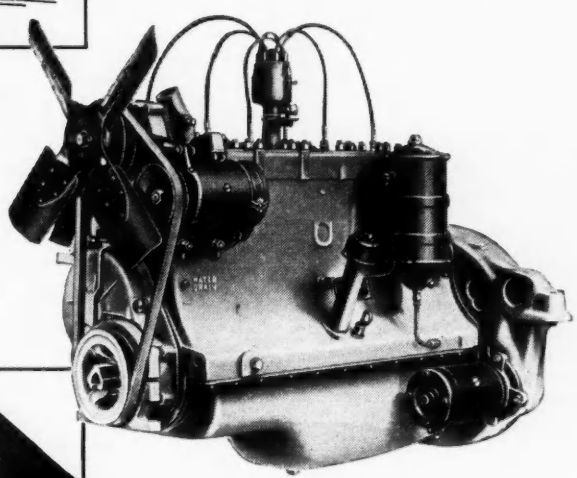
RED SEAL ENGINES

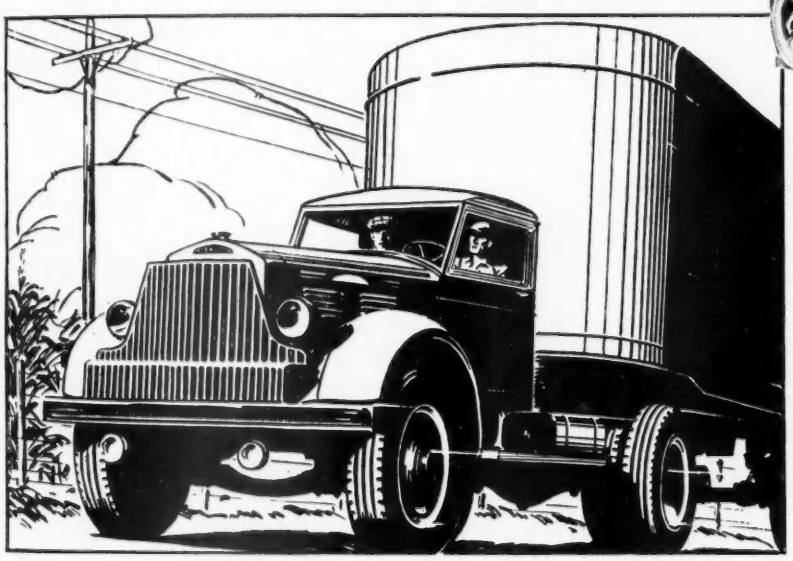
CONTINENTAL MOTORS · Powering the Nation · AMERICA'S STANDARD

ON TIME with Red Seal Power

Whether it's a matter of getting the kids to school by the first bell, or operating transcontinental on-time schedules, there are buses powered with Red Seal engines that will do the job better — at lower cost.

New Red Seal engines, completely post-war in design, are delivering more horsepower per pound, with typical Red Seal reliability and economy. When you are specifying transportation equipment, it will be worth your while to consider units powered by Red Seal engines.





RED SEAL M-330 . . .
a revolutionary engine!
Here is one of many Red Seal engines of completely postwar design. This model delivers 104 h.p. at 2600 r.p.m. with an equipped weight of just 755 lbs. For every heavy-duty transportation need, the Red Seal M-6330 has the power characteristics needed by the job. Write for bulletin TM-45330 containing complete data.

PARTS AND SERVICE---wherever they roll.

Manufacturers of Red Seal-powered transportation equipment are nationally noted for the thorough, competent field service organizations which they maintain. Trucks and buses powered by Red Seal engines reduce operating costs because they're completely dependable. Moreover, you'll find genuine parts service everywhere.

BUILT FOR THE JOB!

Continental Motors Corporation
MUSKEGON, MICHIGAN

CCJ Newscast

(CONTINUED FROM PAGE 38)

field Tire & Rubber Co. and Carlisle Tire & Rubber Div., Carlisle Corp. respectively. Later company is also absorbing Pharis' Molded Materials Div. which will be continued at Ridgway, Pa.

Hartman Rapid Battery Chargers are now being made and sold by the Associated Equipment Corp., St. Louis, which has acquired the exclusive rights to manufacture and market this original equipment.

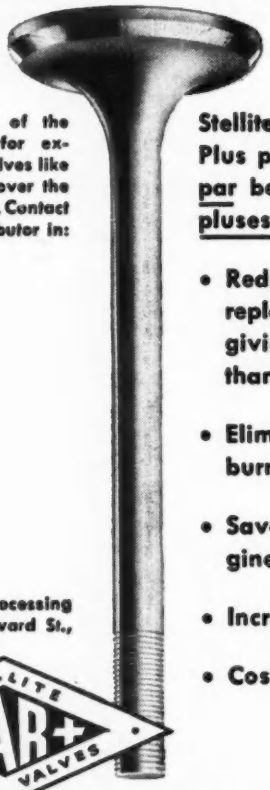
1948 Domestic Truck Factory Sales by Gross Vehicle Weights*

	5,000 & Less	5,001-10,000	10,001-14,000	14,001-16,000	16,001-19,500	19,501-26,000	Over 26,000	Total
January	28,690	15,458	11,641	17,685	5,615	3,166	1,638	83,893
February	32,776	15,623	12,308	16,733	5,983	3,666	1,800	88,889
March	44,110	21,222	15,890	24,237	6,708	4,437	1,968	118,572
April	43,441	20,671	13,910	21,163	6,667	4,039	2,020	111,911
May	37,114	17,132	13,898	18,386	4,734	4,018	1,627	96,909
June	37,244	19,741	13,503	18,794	6,310	4,371	1,792	101,755
July	35,481	20,716	13,105	19,038	5,063	3,501	1,345	98,249
August	39,554	20,744	13,538	16,421	3,595	2,856	1,514	97,222
September	33,884	23,303	11,329	15,211	4,946	4,065	1,458	94,196
October	31,534	22,990	10,575	16,809	4,193	3,764	1,414	91,279
November	29,656	22,687	10,624	16,096	4,894	3,670	1,403	89,030
Total	392,484	220,287	140,321	200,573	58,708	41,553	27,979	1,071,905

* Automobile Manufacturers Association.

OUT AGAIN WITHOUT A VALVE JOB!

Ordinary Valves Never Took it Like Par Pluses!



Take advantage of the Par Plus Plan for exchanging your valves like fleet owners all over the country are doing. Contact our nearest distributor in:

New York
Boston
Philadelphia
Buffalo
Newark
Albany
Detroit
Cincinnati
Columbus
Chicago
Milwaukee
Indianapolis
St. Louis
Tulsa
Los Angeles
San Francisco

or write Parts Processing Corp., 2100 Howard St., Detroit 16.

Stellite-faced for the tough hauls, Par Plus processed valves are better than par because they give you all these pluses:

- Reduce out-of-service time for valve replacement and regrinding while giving 5 to 10 times longer service than best alloy steel valves.
- Eliminate the common troubles: burning, warping, breaking, etc.
- Save service expense, prolong engine life, keep up power.
- Increase fuel performance.
- Cost so little extra!

STELLITE PAR+ FACED VALVES

PAR PLUS VALVES

PARTS PROCESSING CORP.

DETROIT AND BATTLE CREEK, MICHIGAN

1948 Truck Trailer Production*

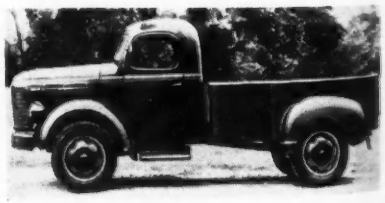
	October	Ten Months
Vans:		
Insulated and refrigerated	194	1,849
Furniture	43	458
All other closed top	1,554	14,882
Open top	191	1,623
Total Vans	1,982	18,812
Platforms:		
With cattle and stake racks	175	1,375
With grain bodies	57	515
All other	513	4,307
Total Platforms	745	6,197
Tanks:		
Petroleum	310	2,784
All other	26	329
Total Tanks	336	3,113
Pole and Logging:		
Single Axle	150	1,975
Tandem Axle	99	1,483
Total	249	3,388
Low-bed heavy haulers	151	1,571
Dump trailers	23	577
Off-highway		
All other trailers	98	2,253
Total Complete Trailers	3,584	35,903
Trailer Chassis	141	1,708
Total Trailers and Chassis	3,725	37,583

* Industry Division, Bureau of the Census.

The Supersite Corp., Bronx, N. Y., manufacturers of automotive lighting equipment and safety devices, has purchased the Dandee Safety Devices Co., of Norwalk, Conn.

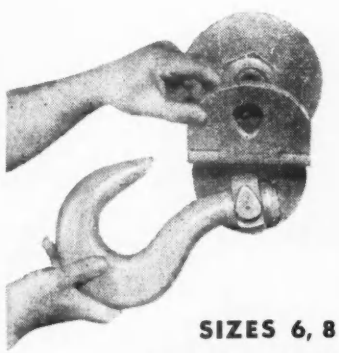
(TURN TO PAGE 206, PLEASE)

Reo's Big Pickup



Reo Motors, Inc., has just announced a new extra big Speed Wagon pickup capable of toting loads up to 2 tons and having a GVW of 8000 lb. The new model D-19X is powered by the 245 cu in. Reo Gold Crown engine. Also just announced are five new combinations in the D-23 series with GVWs ranging from 21,000 to 56,000 lb.

Rig for Speed..



SIZES 6, 8
AND 10 INCH
SHEAVE DIAMETER

with the
American Utility Snatch Block!

● Fast, smooth work with a truck hoist or winch depends upon several factors. First, you need a block that you can rig in a hurry. Second, you want a feeling of absolute safety. Third, you must have a sheave that runs smoothly under heaviest loads, and that carries the rope efficiently in the groove. For all these reasons—and more—your best choice is the AMERICAN Utility Snatch Block.

This is a deluxe block—built with the *armored construction* that has made all AMERICAN blocks famous. Heavy steel side plates, an oversize hinge pin of cold rolled steel, bronze bearings, and the 2″ diameter center pin with Alemite fitting are features that mean long, trouble-free service. (A convenient matching unit, shown in picture above, is the 6″ AMERICAN Toggle Block—easily bolt-mounted to truck body.)

There's nothing to take off, nothing to drop, nothing to lose, as you rig the AMERICAN Utility Snatch Block. Just lift the hook, raise the hinged plate, and lay in the rope. You'll use it in dozens of ways, to move bigger loads at faster speeds than ever before. Order from your distributor, or write us direct if you cannot locate local supplier.

American Hoist
and DERRICK COMPANY
St. Paul 1, Minnesota

Plant No. 2: So. Kearny, N. J.
Sales Offices: NEW YORK • NEW ORLEANS
CHICAGO • PITTSBURGH • SEATTLE

AMERICAN HOIST & DERRICK CO.
SAINT PAUL 1, MINNESOTA 9313

Please send literature on the AMERICAN UTILITY SNATCH BLOCK, and the complete line of American Blocks and Sheaves.

Name_____
Company_____
Address_____
City_____ State_____

CCJ Newscast

(CONTINUED FROM PAGE 200)

FORD PARCEL DELIVERY PRICES

Ford has announced list prices of F-3 forward control parcel delivery chassis as follows: 104-in. W. B., $1375; 122-in. W. B., $1390. Prices include front end grille, windshield and front quarter windows, easy-access engine cover, tilting driver's seat, steering column gear shift, special design frames and springs and double acting telescopic shock absorbers.

TANK TRUCK SAFETY PLAN

National Tank Truck Carriers, Inc., a conference of the American Trucking Associations, Inc., has announced a long-range safety program to be undertaken by the conference in close cooperation with ATA and shippers of petroleum products.

In a letter to all conference members, C. Austin Sutherland, secretary-manager of the group, urged every tank truck operator in the country to participate in the first National Tank Truck Safety Contest, which is to be held in conjunction with the regular ATA National Truck Safety Contest for all types of carriers.

Tank truck companies, now eligible to compete in all divisions of the ATA contest depending on mileage and type of service, also will be eligible to compete in five mileage classes for special awards to be made by the conference.

TRAINING SUBJECTS DRAFTED

The first draft of subject material to be included in next year's training courses for motor vehicle fleet supervisors has been completed by a subcommittee of the National Advisory Committee for Motor Vehicle Fleet Supervisor Training. Ed J. Buhner, Chairman of the Board of ATA, chairman of the Program and Standards Subcommittee, announced completion of first plans following a meeting of the group at ATA headquarters.

Principal subjects to be covered by the courses, scheduled to be held at colleges and universities all over the country, include the work of the supervisor and what he should know, developing driver attitudes, selecting and training the driver trainer, and the limitations and value of driver tests.

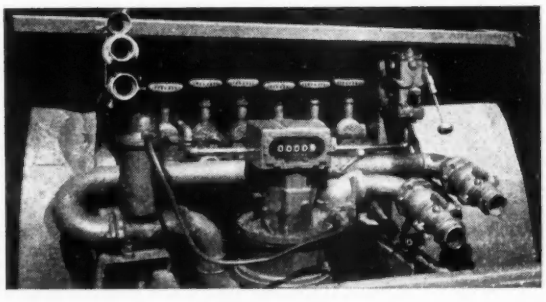
Other subjects listed in the first draft are: training new and in-service drivers, accident investigation, record keeping, analysis and methods of combating high-frequency accidents, maintaining driver interest in safety, how to program for safety, and how to organize the program for action.

Besides Mr. Buhner, those from ATA who attended the two-day session of the subcommittee included John V. Lawrence, Ray G. Atherton, G. D. Sontheimer, Neil Darmstadter (all of ATA); J. Willard Lord, Atlantic Refining Co.; Amos Neyhart, Carl Seashore, Joseph Intorre, D. A. Weaver, and Mr. Pyle (all of Pennsylvania State College); William Simon of the National Highway Users Conference; Charles Ray and John Bowden of Markel Service, Inc.; Dwight McCracken of Liberty Mutual Insurance Co., representing the American Mutual Alliance, Chicago; Carlton Alexander, McLean Trucking Co., Atlanta; Norman Damon, of the Automotive Safety Foundation; and Thomas Boate of the Accident Prevention Dept., Association of Casualty and Surety Companies.

(TURN TO PAGE 208, PLEASE)

SHELL FEATURES —
Highway Safety!

Shell Oil Company is one of the major marketers of petroleum products that feature SAFETY all along the line—from oil well to the refinery—to the bulk plant—to the filling station—and into the motorist's tank. Many of their trucks are equipped with S.&J. Internal Hydraulic Safety Valves which afford the maximum in safety to the product, to the equipment, to the driver, and to the public. In the event of fire as the result of a highway accident or while unloading, these hydraulic valves close automatically and shut off the flow of gasoline. Yes, the maximum in safety not only pays, it is even economical in the end.

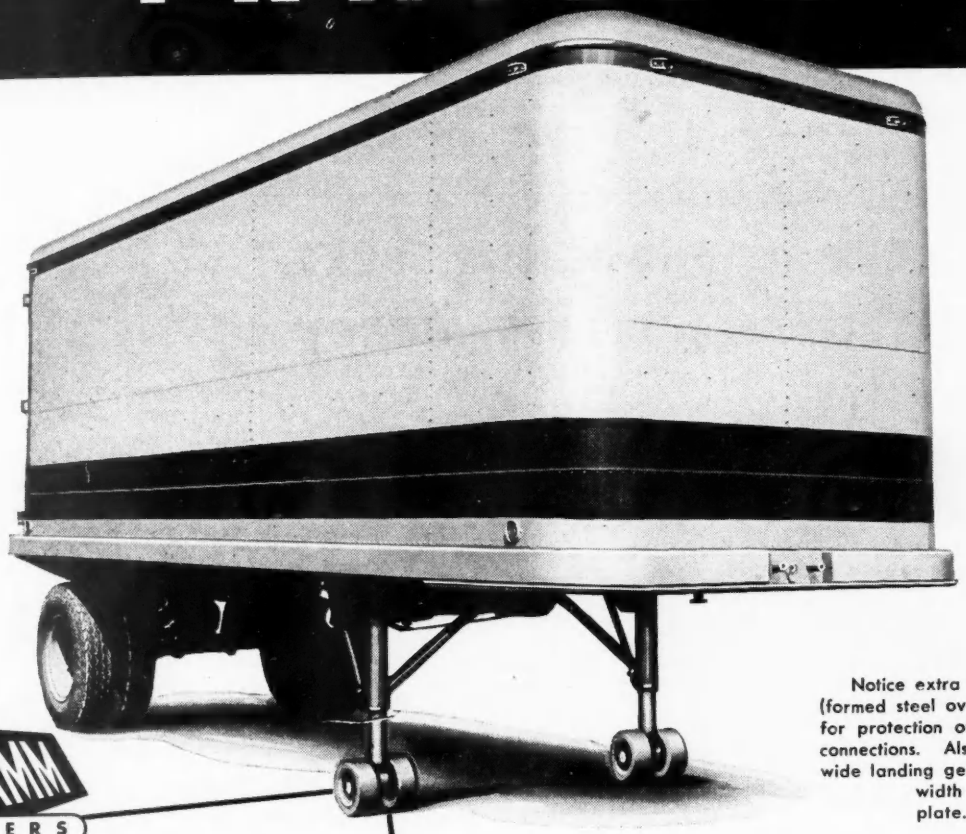


The S.&J. Operator, shown in the upper right of the picture opposite, controls the opening and closing of the internal safety valves located inside the tank compartments.

SHAND & JURS CO.
BERKELEY, CALIFORNIA
NEW YORK CHICAGO HOUSTON LOS ANGELES SEATTLE

SHAND & JURS

"WORK-HORSE" TRAILER



Notice extra thick base rub rail (formed steel over solid hardwood) for protection of body and brake connections. Also note the extra wide landing gear spacing and full width upper fifth wheel plate.

GRAMM TRAILERS

LET GRAMM SOLVE YOUR SPECIAL TRAILER REQUIREMENTS

Many operators have specialized hauling problems which can be solved best by a custom engineered and built trailer. GRAMM is superbly equipped to meet such specialized trailer needs. GRAMM has been producing custom trailers for many years . . . has the engineering and production "know how" to solve difficult problems at surprisingly low cost.

It will pay you to bring your special transport requirements to GRAMM. There's no obligation. And you may be surprised to learn how little it costs to obtain just the special type trailer you need to increase profits.

From every standpoint, this "work-horse" GRAMM door to door pick-up and delivery trailer is built to "take it"! Extra heavy construction throughout to withstand practically any abuse and overcome ordinarily high maintenance costs. This GRAMM van is designed especially for localized service where its weight is no handicap . . . and its ability to take punishment pays off. It's the roughest—toughest trailer you've ever seen! Get all the facts on this van now if your operation includes local pick up and delivery service.

GRAMM

A NAME FAMOUS FOR HIGHEST QUALITY IN TRANSPORT EQUIPMENT

GRAMM TRAILER CORP.
DELPHOS, OHIO

SOLD BY LEADING INDEPENDENT DISTRIBUTORS AND DEALERS

CCJ Newscast

(CONTINUED FROM PAGE 206)

PRESIDENT'S SAFETY CONFERENCE

Major General Philip B. Fleming, Federal Works Administrator, has announced that the 1949 President's Highway Safety Conference will be held June 1, 2, 3, at the Departmental Auditorium, Washington, D. C. General Fleming is General Chairman of the conference.

First activity in getting the 1949 conference under way will be to bring the eight conference committees up to full strength in order to evaluate national traffic problems under current conditions. Committees to draft reports for the 1949 conference will be organized to deal with the following subjects: Committees on Law and Ordinances Motor Vehicle Administration, Accident Records, Education, Public Information, Organized Public Support, Engineering and Enforcement.

In directing General Fleming to continue as General Chairman of the conference, President Truman said in part

"Nation-wide progress in the reduction of motor vehicle deaths and accidents since adoption of the President's Highway Safety Conference Action Program in 1946 has been steady and gratifying. Activities in line with the Action Program have gained momentum in the States and give promise of continuing progress.

"Reports near the close of 1948 are encouraging. It is estimated that the number of fatalities per 100 million vehicle miles of travel for this year may be as low as 7.2, compared with the rate of 12 in 1945 and 8.6 in 1947. Traffic deaths may not exceed 31,300, the lowest death toll in the last 16 years, except for the war years when highway travel was sharply curtailed. This is being accomplished despite steadily increasing traffic volumes."

RECAP ON RUBBER

The Rubber Manufacturing Industry took a year-end look at its 1948 production records and found evidence of broad markets far greater than anything which had been envisaged in the early post-war period.

The industry's consumption of new rubber topped the million-ton mark for the third consecutive year. Rubber consumption totaled an estimated 1,075,000 long tons, as compared with 1,039,000 long tons in 1946 and 1,122,000 long tons in 1947. For the decade prior to 1939 annual consumption averaged less than 500,000 tons a year.

Passenger car tire output totaled an estimated 67,000,000 units, down 10 million from the year before, but ahead of 1946 and far in front of the 50,900,000 casings produced in 1940 which long stood as the biggest of the so-called "normal" peacetime years. Truck and bus tire production totaled 14,700,000 units as against 17,754,000 in 1947, 15,832,000 in 1946, and an average of well under 10 million prior to the war. Truck, bus and passenger car tube production was 72 million units, down 7 million from a year ago.

"Cold" rubber was undoubtedly the most important development of the year. Even though much of the basic work was done prior to 1948 it became a production reality last year. It is considered a real commercial threat to natural rubber because it gives promise of automotive tires superior to those now made from natural rubber. "Cold" rubber is said to be substantially the same as standard GR-S except that it is processed at 41 deg F instead of the usual 122 deg F. Thus the only basic plant change needed is the installation of adequate refrigeration equipment.

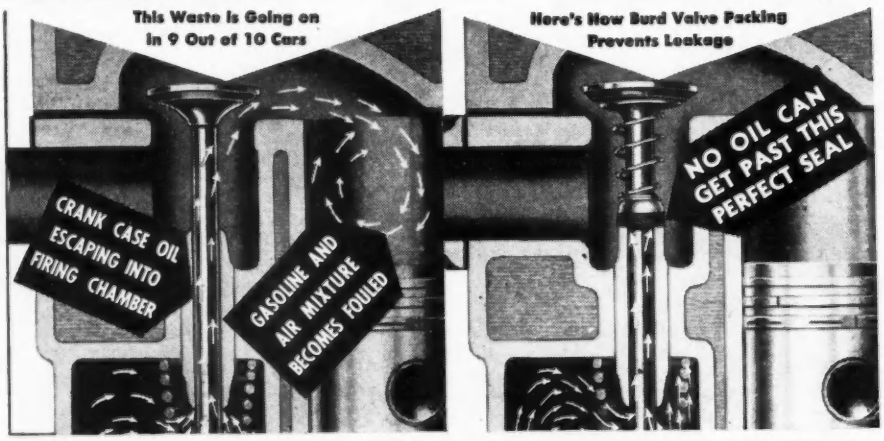
(TURN TO PAGE 210, PLEASE)

Brown Invades East

Carrying out previously announced intentions to invade the Eastern trailer market, Brown Industries, Inc. of Spokane has purchased the former Avco Corp. plant at Toledo. The building contains 80,000 sq ft and is built on a 21-acre tract.

Cash in on the *Little Leaks* that run into *Big Money* with...

BURD *Valve Packing*


This Waste Is Going on In 9 Out of 10 Cars
CRANK CASE OIL ESCAPING INTO FIRING CHAMBER
GASOLINE AND AIR MIXTURE BECOMES FOULED
Here's How Burd Valve Packing Prevents Leakage
NO OIL CAN GET PAST THIS PERFECT SEAL

LOOK FOR THESE EXCLUSIVE FEATURES

- Installed at top of guide to keep oil IN; crank case vapors out.
- Soft tension spring centered on guide.
- Packing lubricates guide during warm up.
- Steel jacket gives packing snug fit.
- Contains self lubricating, polishing graphite.

Here's a staple item that takes up only a little shelf-space but opens up a big profit area! Every engine, old or new, has oil and compression leaks along the intake valve guides. Burd Valve Packing is the best way to stop those leaks. It contains self-lubricating, polishing graphite . . . is easily installed at top of guide to keep oil IN, crankcase vapors OUT. Every owner of an automobile, truck, tractor or plane is a potential customer for the firm that features Burd Valve Packing. It's the valve packing preferred by thousands of servicemen because it makes good reconditioning jobs better . . . and customers recognize the difference. Cash in on the little leaks that run into big money. Order Burd Valve packing from your jobber.

Burd Piston Ring Co.
Rockford, Illinois

LOW IN COST
NO MACHINING
NECESSARY

BURD
AUTOMOTIVE
PRODUCTS

BURD "GRAF-FLOX" PISTON RINGS • HaDees HOT WATER HEATERS • BURD VALVE GUIDES

Low Cost per Mile...

DELCO-REMY
ELECTRICAL EQUIPMENT

You can depend on Delco-Remy original-equipment replacement parts to keep your fleet rolling over more miles at less cost. Delco-Remy supplies the same quality products for replacement as for original equipment on leading trucks and buses built today.

The completeness of the Delco-Remy line makes it possible to keep your older model trucks in top condition. A nation-wide distributing organization assures you the parts you need when you need them.

When it comes time to overhaul your fleet's electrical equipment, remember — you replace less often, with less cost and trouble, when you replace with Delco-Remy.

Delco-Remy
DIVISION, GENERAL MOTORS CORPORATION
ANDERSON, INDIANA

UNITED SERVICE MOTORS

DELCO-REMY—A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS

WHEREVER WHEELS TURN OR PROPELLERS SPIN

CCJ Newscast

(CONTINUED FROM PAGE 208)

GOTFREDSON QUITS MANUFACTURE

Gotfredson Truck Co. of Detroit has discontinued manufacture of diesel trucks. The company still is in business as Cummins Diesel Service and Sales of Michigan but now is confining its activities to servicing Gotfredson trucks and acting as distributor for the Cummins Engine Co. The company still has plenty of parts to service all of its trucks still in service.

JOHN BEKINS DIES

John Bekins, a pioneer in the moving and storage industry in the west, died on Nov. 10. He was one of the few life members of the American Warehousemen's Association, and was an original member of the National Furniture Warehousemen's Association.

PMTA SPONSORS RESERVE UNITS

Pennsylvania Motor Truck Association is sponsoring the 438th Transportation Highway Transport Brigade under command of Col. Harley L. Swift. Three units have already been organized under the U. S. Army Reserve activity and several more units are expected to be put in operation within the near future. Direct commissions are available to those who can qualify by reason of professional and technical experience.

DAVIDSON HOST TO KIDS

The Baltimore terminal of Davidson Transfer & Storage Co. recently played host to 40 children of the Silver Spring Intermediate School of Silver Spring, Md.

To find out what really goes on "behind the scenes," the group inspected Davidson mechanical equipment, shops, accounting and tariff departments and household moving division. Later, a film on traffic safety was shown and narrated by W. A. Duffy, director of safety and personnel at Davidson.

FRUEHAUF TO SCRAP JOLOPIES

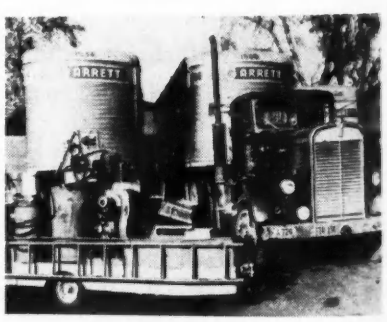
A policy of junking unsafe trailers, traded in on new merchandise, has been set up by Fruehauf Trailer Co.'s sales department. Aimed at elimination of overage and unsafe equipment from the highways, the move was dictated by a desire to reduce accident hazards. At the time of receipt, each trade-in unit will be given a complete safety inspection. Minor defects that can be corrected will be repaired. Any unit the examiners deem unsafe will be broken up and sold as scrap metal.

TRUCKLOADINGS AT NEW HIGH

The upward trend in truckloadings continued through October, as the American Trucking Association's index rose to a new all-time high. Comparable reports from 300 motor carriers in 38 states showed the volume of freight transported by them in October increased 2.2 per cent over September and 1.8 per cent over October, 1947. The index figure climbed to 255, computed on the basis of the average monthly tonnage of the reporting carriers for the three-year period of 1938-1940 as representing 100.

(TURN TO PAGE 212, PLEASE)

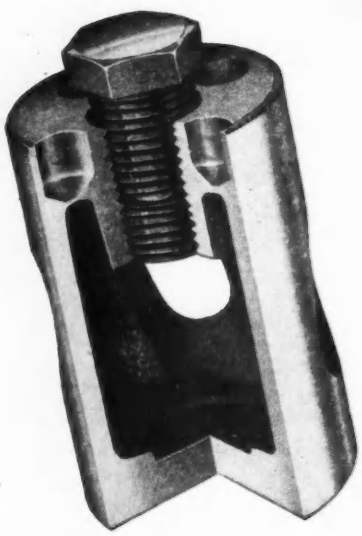
Chore Boy Greaser



Garrett Freight Lines of Pocatello, Idaho, recently purchased this Buda "Chore Boy" for outdoor servicing of trucks and trailers. The basic unit has a 2-cyl Onan air-cooled engine that gives it a speed of 12 mph. On it Garrett mounted a gasoline driven air compressor and tank, oil drum with metered pump complete power lubricating equipment and a ladder

V-8 VALVE JOBS MADE EASY!

with Johnson ADJUSTABLE TAPPETS



Do the job right! Install Johnson Adjustable Tappets in Ford and Mercury V-8's (85-100 HP engines).

You need no expensive shop equipment. You can make installations in half the ordinary time and without the task of fitting valves.

Special spanners, included with each set of tappets, leave both hands free for quicker and more accurate adjustments.

Patented Johnson Self-Locking Tappet Screw maintains its original setting for many thousands of miles.

The millions of Johnson Tappets in use today are giving dependable service and providing smooth, quiet engine performance.

You'll find that you will make larger profits and gain more satisfied customers when you install Johnson Adjustable Tappets.

SEE YOUR JOBBER

Johnson PRODUCTS INC.
MUSKEGON, MICHIGAN
"Tappets Are Our Business"

Please Read This Before You Buy Motor Oil This Year!

Before you decide upon the motor oil you expect to use this year, we urge you to read these few paragraphs.

For we believe that we have an outstanding oil that can be a real help to your over-all operation. This oil is Gulfpride-Diesel, the World's Finest Diesel Lubricating Oil. An oil that provides proper lubrication as well as keeps your engine clean.

Gulfpride-Diesel is Alchlor-processed (exclusive with Gulf)—it has a rich, full paraffin base that provides a particularly strong oil film and superior lubrication under the toughest operating conditions. It will help you get longer engine life.

And because Gulfpride-Diesel has full detergency, it will help keep your engines clean.

In automotive Diesel engines, high-temperature sludge, piston varnish, lacquer and stuck rings will be avoided. Deposits and ring sticking in extra-heavy-duty gasoline engines, due to lubricating oil oxidation, will also be avoided. Deposits of excessive fuel soot from rich full throttle operation can be minimized with Gulfpride-Diesel.

You'll use less oil with Gulfpride-Diesel because rings stay clean and free, insuring better compression and proper oil control. Its patented antifoam agent prevents crankcase foam.

To find out more about Gulfpride-Diesel, contact your nearest Gulf Office.

SAFETY NOTE: Feel safe and sure when your equipment is rolling on Gulf Heavy-service Truck Tires. For these tires have weftless rayon cord to reduce heat—zig-zag, anti-skid tread—angled grooves that combat cracking. At any Gulf dealer's.

GULF

GULF OIL CORPORATION • GULF REFINING COMPANY

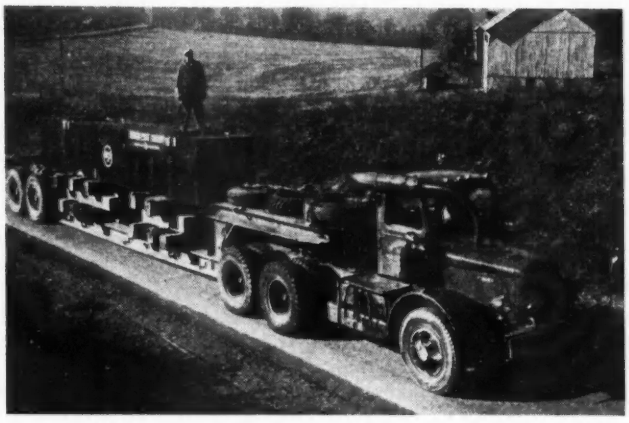
Boston • New York • Philadelphia • Pittsburgh • Atlanta
New Orleans • Houston • Louisville • Toledo

CCJ Newscast

(CONTINUED FROM PAGE 210)

CONTINENTAL GETS BIG ORDER

Continental Motors Corp. has received an initial $18,800,000 order from the Ordnance Department for its new type air-cooled tank engine (Oct. CCJ, p. 86). The engine to be produced is a 12-cylinder V-type model built to use 80 octane gasoline and rated at 810 hp without supercharger and 1040 hp with supercharger.



120-Ton Load

Carnegie Institute of Technology's nuclear research equipment comes in big pieces. This 120-ton "hunk" is just part of a 400-million - volt synchrocyclotron. John Benkart & Sons did the moving job with a Cummins-powered Mack tractor and whopping low-bed trailer

For 2-Speed Axles the Safe, Positive, Economical Shift is AIR!

BENDIX-WESTINGHOUSE AIR BRAKES

SAFETY **is assured by a constant source of stored power, always available. The fact that this system is fully protected is further guarantee of freedom from failure due to any type of operating conditions.**

POSITIVE**—The instant acting, sustained power of the air shift prevents missed gears, permitting positive gear selection at the driver's command, without any loss of headway.**

RELIABLE**—Simple, small, compact and rugged in design, the unit is easily removed and serviced by any auto mechanic.**

ECONOMICAL**—All these advantages are available at no extra operating cost when you have air brakes on your trucks.**

the Best Air Shift is Bendix-Westinghouse

NEW YORK FLEET GROUP

Promptly at 6:30 on the third Wednesday of each month, members of the Society of Fleet Supervisors, New York, meet around a private dinner table at the President Tavern (Lexington between 40th and 41st) to discuss fleet maintenance and operating problems. Starting the New Year on Jan. 19, Ralph Kress of Chevrolet's National Fleet Dept. will give a brief talk on some elaborate maintenance tests recently completed by Chevrolet. Visitors are welcome and further information can be obtained from Tom Berk, secretary, 1 Madison Ave., New York.

HOMETOWN NOTES

Atlanta: A new Chain Belt Co. warehouse at 878 Ashby St., N. W., serving the entire Southeast section of the country.

Cedar Rapids, Iowa: Transport & Equipment Co., 2519 Sixteenth Ave., S. W., is now Trailmobile distributor.

Dayton, Ohio: Hoffman Trailer & Equipment Co., 620 E. First St., is new exclusive Trailmobile distributor.

Detroit: Russ Dawson, Inc., Ford dealer, has opened separate truck sales and service establishment at Park Ave. and Vernor Highway.

Grand Rapids, Mich.: United States Rubber Co. has a new sales branch at 167 Ottawa Ave., N. W.

Milwaukee: A new International truck sales and service headquarters (also housing district offices) at 420 S. First St.

New York: A new warehouse for Owatonna Toll Co., at 54 Macdougal St.

Springfield, Mass.: A new sales branch of United States Rubber Co. at 132 Birnie Ave.

RED FACE DEPARTMENT

To the Editors' chagrin, Kentucky Mfg. Co., Louisville, Ky., founded in 1879, was inadvertently omitted from the Directory of Trailer Manufacturers appearing on page 280 of the November Issue.

This was a listing of trailer companies which had responded to a request for biographical and statistical data.

(TURN TO PAGE 214, PLEASE)

Your tires *BRAKE EVEN when you buy Kingham

Whether you purchase a Kingham single or tandem axle semi trailer—whether you purchase four or six wheelers—in fact regardless of the number of axles or wheels—the answer is the same—

Kingham's have the BRAKES that give you:

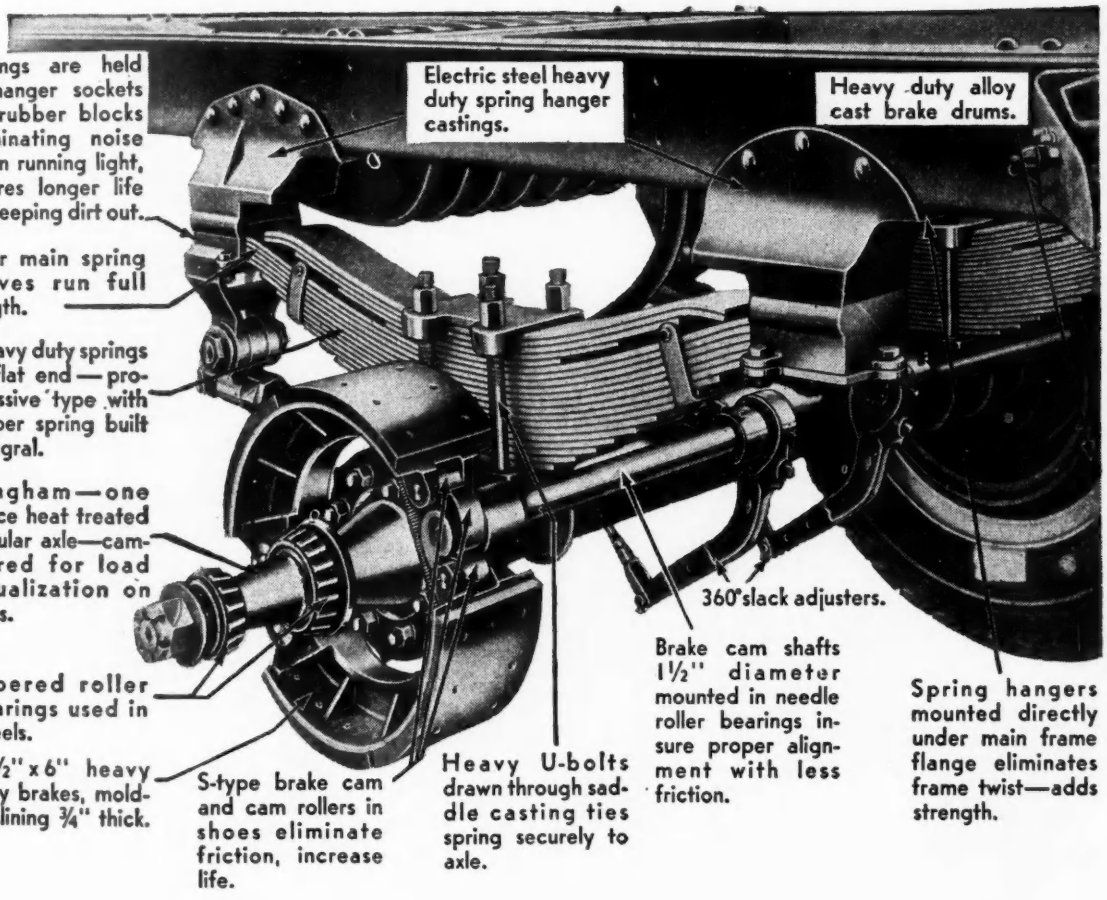
LONGER TIRE LIFE

due to Uniform, Positive, quick application Braking.

***Kingham's brakes have been greatly improved and proven in actual service. In addition to their constant, trouble-free operation that assures greater tire mileage, maintenance costs are negligible.**

Ask ANY owner of a NEW Kingham how he likes his trailer; LET HIM BE YOUR GUIDE IN SELECTING YOUR NEXT UNIT.

A load behind is a trip ahead


Springs are held in hanger sockets by rubber blocks eliminating noise when running light, insures longer life by keeping dirt out.
Four main spring leaves run full length.
Heavy duty springs — flat end — progressive type with helper spring built integral.
Kingham — one piece heat treated tubular axle—cambered for load equalization on tires.
Tapered roller bearings used in wheels.
16½" x 6" heavy duty brakes, molded lining ¾" thick.
S-type brake cam and cam rollers in shoes eliminate friction, increase life.
Heavy U-bolts drawn through saddle casting ties spring securely to axle.
Brake cam shafts 1½" diameter mounted in needle roller bearings insure proper alignment with less friction.
360° slack adjusters.
Spring hangers mounted directly under main frame flange eliminates frame twist—adds strength.
Electric steel heavy duty spring hanger castings.
Heavy duty alloy cast brake drums.

NATIONAL SALES **Kingham UNIVERSAL Trailers** NATIONAL SERVICE

KINGHAM TRAILER COMPANY, INCORPORATED LOUISVILLE, KENTUCKY

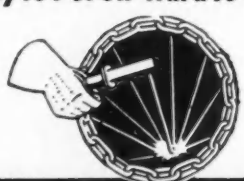
McKAY

Multi-Grip & Regular TIRE CHAINS

For better traction and longer wear, McKay Tire Chains are your best bet! McKay *Regulars* for normal conditions and McKay *Multi-Grips* for rugged going—both are designed to give reliable protection on hazardous winter roads.

Ask your dealer today for McKay —the *Better Tire Chains* in the "red band" bag.

Easy to Put On · Hard to Wear Out



THE McKAY COMPANY
465 McKAY BUILDING
PITTSBURGH 22, PA.

The Name that insures every brake service job

EIS

VETERAN brake repairmen will tell you that the name Eis has always stood for brake parts and brake fluid of the highest quality—specially engineered and produced for the service trade.

Demand brake parts by Eis to insure a dependable job.

Ask your jobber to show you the Eis Master Cylinder and the new Eis re-enforced Cup for Chrysler-built cars. They're worth looking into.

THE EIS AUTOMOTIVE CORP.
Middletown, Conn.

EIS
BRAKE PARTS
BRAKE CYLINDERS
BRAKE FLUID
BRAKE CABLES
BRAKE TOOLS

CCJ Newscast

(CONTINUED FROM PAGE 212)

BRAKE TESTS RESUMED

The Public Roads Administration, with the assistance of the Advisory Committee on Motor Vehicle Brake Research, has resumed its series of brake-test studies which were dropped during the war years.

Test runs were begun in Maryland on November 8 and are scheduled for the West Coast early next year and for the Middle West sometime later in 1949.

The test runs in Maryland were held over a section of U. S. 40, about six miles southwest of Elkton.

In making these tests, passenger cars and trucks are selected at random from the general flow of traffic, weighed, and subjected to three emergency stops from a speed of 20 mph.

Principal objectives of the research program are to find what levels of brake performance can reasonably be met by vehicles currently in service, to determine the essentials of reasonable brake regulations and practical means of complying with these regulations, and to establish a better understanding of braking phenomena.

INDIANA USERS' TAX PROPOSAL

The Indiana Highway Users Conference has approved a proposed plan for vehicle taxation. It includes a proposal that commercial vehicles would be taxed according to shipping weight rather than on the manufacturer's rated capacity as at present.

SNEAD HEADS T & M ACTIVITY

J. L. S. Snead, Jr., of Consolidated Freightways, Inc., Portland, Ore., has been elected vice-president of the Transportation and Maintenance Activity of the Society of Automotive Engineers.

CITATION TO WINCHESTER

The American Petroleum Institute last month awarded a citation to John F. Winchester in acknowledgment of meritorious service to the petroleum industry through his participation in the work of the Institute.

(TURN TO PAGE 216, PLEASE)

Pre-Insulated
STEEL BUILDINGS

Prompt delivery complete in one package 24′ and 40′ clear span or any multiple. Any length, multiples of 8′.

GARAGES • WAREHOUSES

THE PIONEER COMPANY
Century Building • Pittsburgh 22, Pa.

Another Permanente Metals' service:

SHEET ALUMINUM—PRIMECOATED FOR PAINT

To obtain a paint finish that won't crack, peel, or blister—that will *keep* its beauty—all metal surfaces should be properly prepared.

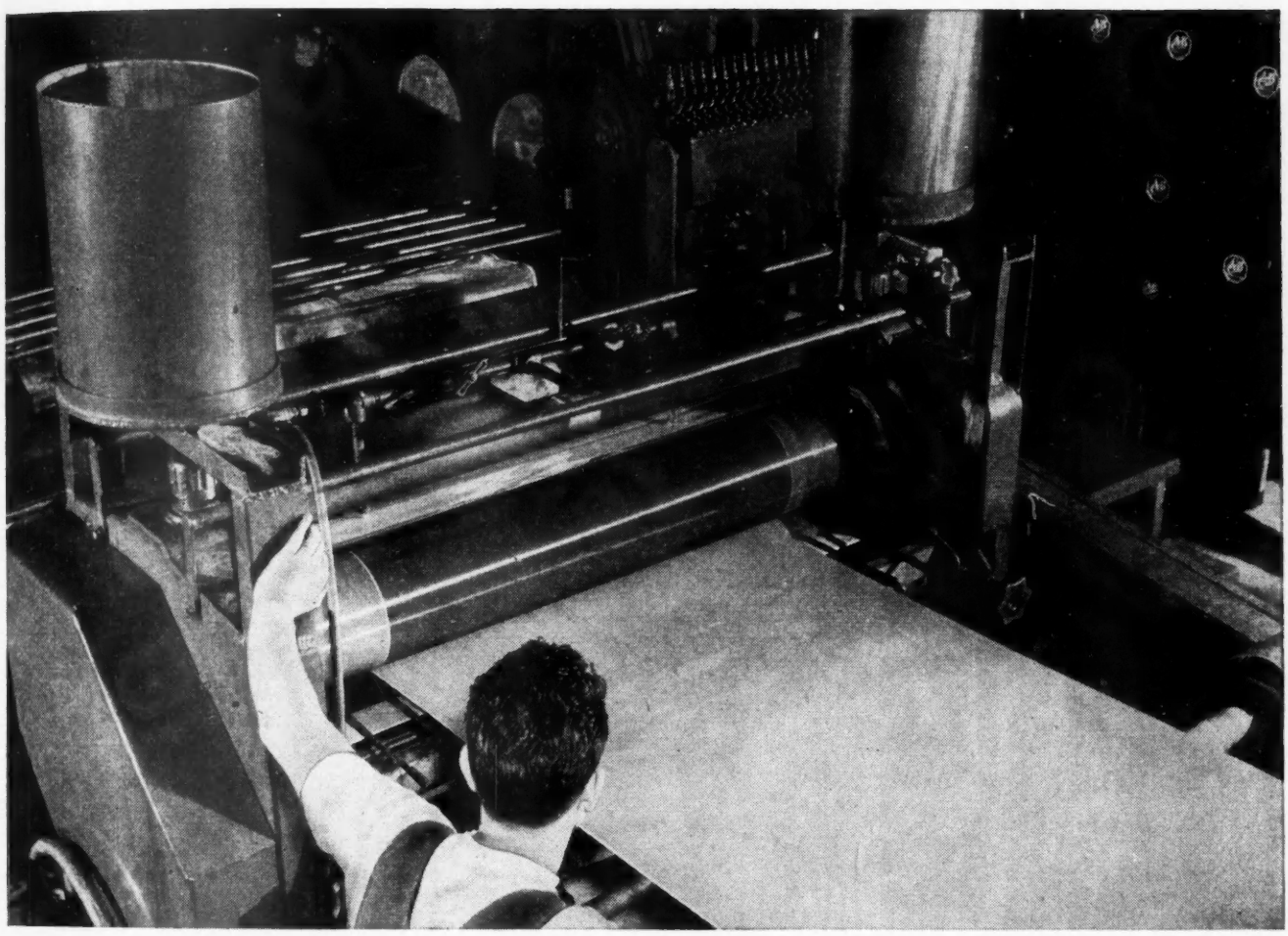
One of the most successful preparations for aluminum surfaces is a war-developed primer—called WP-1—a formulation of vinyl-butyral resin pigmented with zinc chromate.

It has proved so satisfactory that Permanente Metals is now applying it to aluminum sheet for distribution to fabricators of painted or enameled products.

As a result, users of Kaiser Aluminum can obtain a mill primed sheet which will assure excellent adhesion and long life for finish coats applied to the primed surface. And they know that this primed surface will be uniform in quality, due to close mill control.

This new Permanente service offers still other advantages. Fabricators are spared the necessity of surface preparation in their own plants. Handling is reduced. And the cost of additional equipment is eliminated.

May we tell you more about this service?



THIS ROLL COATING MACHINE in Permanente Metals' Spokane mill is the finest of its kind in the United States. It prime coats flat or coiled sheet in widths up to 48 inches, dries it immediately under infrared lamps.

Kaiser Aluminum

product of Permanente Metals Corp.

SOLD BY PERMANENTE PRODUCTS COMPANY, KAISER BUILDING, OAKLAND 12, CALIFORNIA . . . WITH OFFICES IN:
Atlanta • Chicago • Cincinnati • Cleveland • Dallas • Detroit • Houston • Indianapolis • Kansas City • Los Angeles • Milwaukee
Minneapolis • New York • Oakland • Philadelphia • Portland, Ore. • Salt Lake City • Seattle • Spokane • St. Louis • Wichita

JOYCE
LIFTS & JACKS

Single and 2-Post Lifts for all types cars, trucks and buses. New ultra-modern design; simplified installation; level, clear floors; air or electric power. Also Liftmaster Hydraulic Jacks—forged steel construction. *Ask for Bulletins.*

THE JOYCE-CRIDLAND CO., DAYTON 3, OHIO

the BEST line
for '49
MARQUETTE

BODY BUOYS
Float the Overload

Coil Overloads That Preserve Main Spring Resiliency

AUTOMOTIVE AIDS CORPORATION
3526 W. Fort Street
DETROIT 16, MICH.

OVERSIZE
REAR WHEEL STUDS for all Trucks
Order from Your Jobber
CHAMP-ITEMS, Inc.
6191 Maple Ave.
St. Louis 14, Mo.
SEND FOR CATALOG

MORE PROTECTION!
MORE MILEAGE!
P&P-5034
CLEVELAND CHAIN
THE CLEVELAND CHAIN & MFG. CO.
Cleveland 5, Ohio

CCJ Newscast

(CONTINUED FROM PAGE 214)

ATA AWARD REVISION

Hargleroad Van and Storage Co., Hastings, Nebraska, has been awarded a trophy in the 14th National Truck Safety Contest of the American Trucking Associations, Inc. The company was judged the winner in the class for companies operating 150,000 to 500,000 miles annually in combined local and long-distance service.

Awards to other winners in the contest were made in Mid-October, but due to a clerical error at ATA headquarters the Hargleroad company's report did not go to the board of judges in time to be considered along with the other entries. Class C-2 in the contest was set up for companies operating 100,000 to 500,000 miles annually and the award was made to Lay Trucking Company, Laporte, Indiana.

In fairness to both companies, the mileage division was changed for this year only so that the Lay company retains its award as winner in the class for companies operating between 100,000 and 150,000 miles annually.

(TURN TO PAGE 218, PLEASE)

For Every
METAL CLEANING
Requirement
★ Degreasing Machines & Safety Solvents
★ Metal Parts Washers
★ Alkali & Emulsion Cleaners
★ Strippers & Spray Booth Compounds
DETREX Corp.
DETROIT 32, MICHIGAN

DIETZ
Over a Century of Safety Lighting
R. E. DIETZ COMPANY
60 LAIGHT STREET
NEW YORK 13, N.Y.

When you call for
DURO CHROME
you're sure of getting
Doggone Good Tools!
DURO METAL PRODUCTS CO.
2649 N. Kildare Ave., Chicago 39, Ill.
Also Makers of DURO Machine Tools

BE SURE
the trademark "Timken" is on every tapered roller bearing you buy. Timken bearings are first choice with truck and trailer manufacturers. Remember—for the best in bearings—
IT'S "TIMKEN"
Trademark Reg. U. S. Pat. Off.
The Timken Roller Bearing Company
Canton 6, Ohio

MORE THAN STRAINS
Actually Cleanses Oil!
DELUXE
MORE THAN FILTERS
Oil Filters
DE LUXE PRODUCTS CORP., LA PORTE, IND.

VANETTE
Division of BROOKS & PERKINS, Inc.
2447 Woodward Avenue, Detroit 1, Michigan

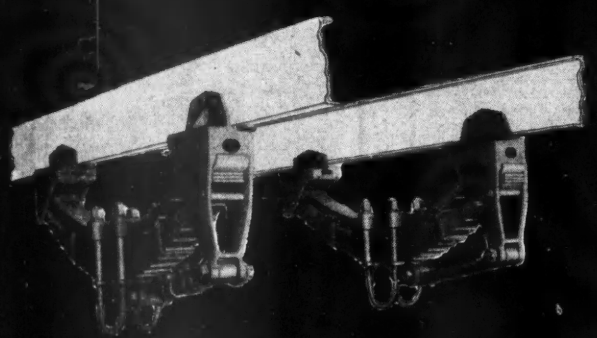
Is it *Air* YOU WANT?
—then write for
BULLETIN C-6
illustrating and describing
CURTIS AIR COMPRESSORS • AUTO LIFTS • CAR WASHERS
CURTIS PNEUMATIC MACHINERY DIVISION
of Curtis Manufacturing Company
1970 Kienlen Avenue • St. Louis 20, Missouri

CRESCENT
Wirey Joe
AUTOMOTIVE CABLE
Manufactured by
THE CRESCENT COMPANY, Inc.
Pawtucket, Rhode Island
CHECK THE WIRE ON EVERY JOB

TURN

TO Standard AND Build up Payloads!

UTILITY
DUAL AXLE UNITS



Single Spring Suspension

Fleet Owners, private operators, and trailer manufacturers everywhere are reaping new and larger profits from increased payloads on trailers equipped with Standard Dual Axle Units. Join them now and save with these proven advantages:

No Wheel Bounce
Better Braking
Lighter Weight
Less Maintenance

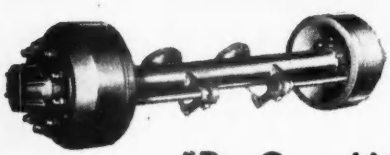
• • •

Standard's Single Axle Spring Suspension makes light work of axle assembly problems. Serves high or low frame trailers. Straight-line spring and radius rod set-up gives easy pulling without rod bending. No parts removed for axle alignment. Spring and helper spring capacities ample for maximum load.

•

EXPORT BRANCH
4900 Euclid Ave.,
CLEVELAND 3, OHIO
Phone: Henderson 0414
Cable address: STANFORAX

WAREHOUSE
201 Southeast Washington St.
PORTLAND, OREGON
C. G. King, Manager



TUBULAR AXLES
TRUNNION AXLES
BRAKES

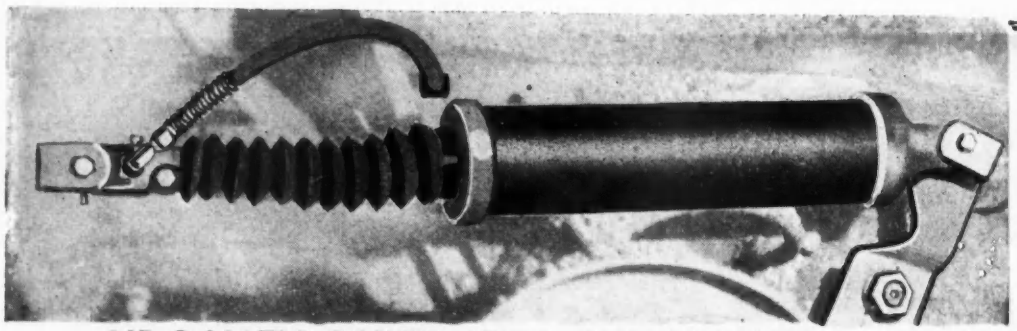
"Be Sure Your Axles are Standard"

Write *today*
for complete engineering data!

Manufactured By

Standard Forge & Axle Company Inc.

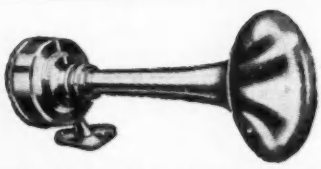
MONTGOMERY 2, ALABAMA



AIR-O-MATIC POWER STEER CORPORATION
2180 Lee Road • • • • Cleveland 18, Ohio

Easier and Safer TRUCK MANEUVERABILITY

A self-contained unit of extremely simple construction, yet exceptionally effective and precise in operation. No buttons or levers are required to operate the Air-O-Matic Power Steer—it works automatically, helping only as the operator of the vehicle leads the steering wheel in either direction. It automatically stops helping when the operator stops leading the steering wheel. Details and technical information available on request. Valuable territory open in the South and West. Write or wire for full details.



STROMBOS AIR HORNS
Clear the Way!

Mr. Fleet Operator: Strombos Air Horns for trucks clear the way without delay, boosting safety and economy by minimizing slow-downs and stops. *Result*: Less tire and brake wear, less fuel consumption and less driver fatigue. Approved by GMC, White and Federal for easy installation with air brake equipment. Contact your dealer or write for information.

STROMBOS
MOST POWERFUL OF ALL SIGNALS
STROMBOS

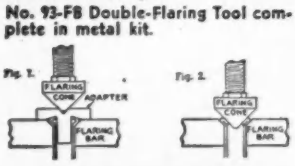
STROMBOS CO.
4525 TWELFTH ST., DETROIT 8, MICH.

IMPERIAL
Double-Flaring Tool

. . . for steel and other metal tubing

● Ideal for brake, gas and oil line work. Overcomes tendency of welded steel tubing to crack when flared with ordinary flaring tool. First, tubing is belled, Fig. 1. Then flared in conventional manner, Fig. 2.

No. 93-F8 Double-Flaring Tool complete in metal kit.



Order From Your Jobber

THE IMPERIAL BRASS MFG. CO.
1209 W. Harrison St., Chicago 7, Ill.

CCJ Newscast

(CONTINUED FROM PAGE 216)

NEW MILEY REPRESENTATIVES

L. J. Miley Co. will be represented by Ben J. Martin of Buechel, Ky. In the Indiana territory with the exception of Evansville, Terre Haute and Vincennes and Lake County, Miley will be represented by Arthur C. Zimmer of Indianapolis. Clarence E. Salzman, associated with W. A. Strouse, will now represent Miley in the Michigan territory.

(TURN TO PAGE 220, PLEASE)

LET'S GIVE IT THE OLD "ONE-TWO"

Arthritis and Rheumatism remain the most neglected major cause of suffering in the United States. More than seven million suffer its crippling effects!

Not 1 in 20, not even 1 in every 3—but 97 per cent of all persons beyond middle life develop some changes characteristic of this joint and muscle disease.

Rheumatic heart disease is the chief cause of death among children aged 5 through 19.

Each year, more than 97 million work days are lost because of rheumatic disease, more than half the total occurring in families with an annual income of $1,000 or less.

Too few persons know that more than 60 per cent of rheumatic disease can be arrested if early treatment is instituted.

Regular periodic exams by your physician can do much to prevent the crippling effects of rheumatic disease. If you have any vague aches or pains—see him at once.

You can also help fight the Great Cripplers. Send your contribution to The Arthritis and Rheumatism Foundation, 535 Fifth Avenue, New York 17, New York.

UNITS AVAILABLE

GRICO
2-AXLE DRIVE
19842 W. Eight Mile Rd.
Detroit 19, Michigan

Gear Pullers

GARAGE TOOLS

CARBON SCRAPER
CREEPER CASTERS
BUSHING REMOVERS
REAMERS

Cal-Van
MACHINE PRODUCTS INC.
Write for Catalog

FOR LOWER OIL COSTS

Cleaner Oil
•
Conserves Engine Life
•
Cuts Oil Expense

Bulletin No. 837 Gives The Facts
•
MICHIANA PRODUCTS CORP.
Michigan City
Indiana

MICHIANA OIL FILTERS

• GUMOUT CLEANS CARBURETORS •

GUMOUT *tunes* **carburetors**

Gumout cleans fuel system, keeps it clean! Improves engine performance. Eliminates moisture. Adds power. Use the year around with your gasoline.

PENNSYLVANIA REFINING CO.
2692 Lisbon Road, Cleveland 4, Ohio
Butler, Pa.—Edgewater, N. J.

GUMOUT CLEANS CARBURETORS
GUMOUT CLEANS CARBURETORS
• GUMOUT CLEANS CARBURETORS •

CRACKED BLOCKS

BLOCKSAVER repairs with a hard, METALLIC filler that fuses into pores of crack, and which expands and contracts with casting.

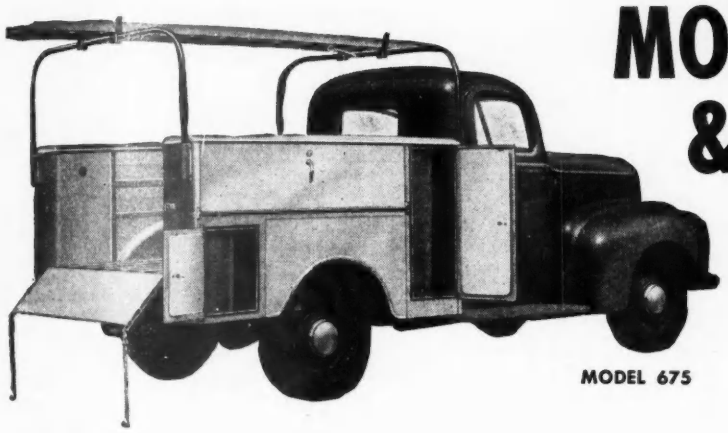
Safe to use. Anti-freeze can be put in right after treatment. No draining required. Will not congeal upon contact with anti-freeze. No hot spots. Order from your jobber or write.

The Zo-tite Products Co.
Dept. cc, Ozone Park 16, N.Y.

YOU GET MORE

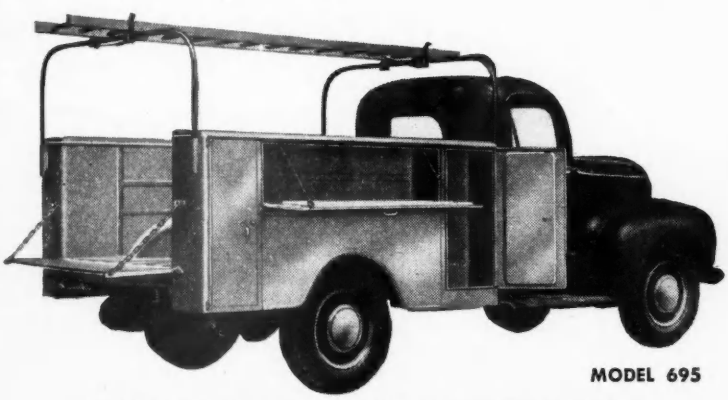
IN THE NEW ALL-STEEL ALL PURPOSE

MORRISON SERVICE & UTILITY BODY



MODEL 675

MODEL 685



MODEL 695

for every type of sales and

- More Service!
- More Room!
- More Pay Load!
- More Convenience!
- More Advertising Space!
- More Safety!
- More Extras!
- More Value!

Morrison Steel Products, designers, engineers and manufacturers of precision steel products for the automotive industry for over 35 years, present this new line of general service and public utility light truck bodies — the new all-steel all purpose Morrison Service & Utility Body!

Completely precision made — from draftsman's board to assembly line — the Morrison Utility Body offers the latest engineering techniques of the modern metal stamping art. The streamlined Morrison Body combines light weight with the strength of high tensile steel — attractive appearance at the right price . . . and its all steel underbody bridge-type construction means more strength — more pay load — more space — more service.

From the roomy weathertight Wise key locked and handled compartments to its offset-reinforced non-skid heavy load floors . . . from its reinforced stamped man-carrying top to its interchangeable parts . . . you get more from the mass precision produced Morrison Service & Utility Body.

AVAILABLE IN 4 SIZES TO FIT ANY STANDARD ½, ¾ OR 1 TON TRUCK CHASSIS

"THE BODY UTILIFUL"

SERVICE UTILITY
MORRISON

Morrison Utility Bodies are sold only through truck equipment distributors strategically located throughout the country. Write for the name of your nearest Morrison distributor.

SPECIFICATIONS AND GENERAL INFORMATION

MODEL	675	685	695
FLOOR SPACE	50½ x 74¼	50½ x 84¼	50½ x 94½
BODY WIDTH—Overall	76	76	76
HEIGHT—Overall	42	42	42
HEIGHT—Floor to Top of Boxes	29½	29½	29½
SIZE—Upper Compartments	12¼x16x57¼	12½x16x64	12¼x16x57¼
SIZE—Front Compartments	12¼x40x17½	12¼x40x21	12¼x40x21
SIZE—Rear Compartments	12¼x21¼x17½	12¼x21¼x17½	12¼x37¼x17½
DOORS—Upper	14¾ x 56	14¾ x 62½	14¾ x 56
Lower Front	15 x 35¾	18½ x 35¾	18½ x 35¾
Lower Rear	15 x 18½	15 x 18½	15 x 35¾
WEIGHT—Net of High Tensile Steel	480 lbs.	540 lbs.	580 lbs.

MORRISON
STEEL PRODUCTS, Inc.
601 AMHERST ST. • BUFFALO 7, N. Y.

MONKEY LINK
Self-Closing Repair Link

Trade Mark Reg. U. S. Pat. Off.

MONKEY LINKS

Fit all types of Tire Chains.
Made in 5 sizes.
Order them today.

FLOWER CITY SPECIALTY CO.
Rochester, N. Y.

REFLECTORS
LAMPS AND
FLAMELESS
FLARES

the Brightest Spot on the Road

the GROTE MFG. CO., Inc.
BELLEVUE, KENTUCKY

Always Insist On
KEN TOOLS TIRE AND WHEEL CHANGING
...they're *"Job Designed"*

Ask For KEN-TOOL Replaceable-Rubber-Head
or
KEN-TOOL Standard
Tire Hammers

"Job Designed" for changing tires use either KEN-Standard or Replaceable-Rubber-Head Tire Hammers. Built stronger to last longer. . .real time and labor saver!

JOBBERS: Write for Catalog Today!

LARGEST EXCLUSIVE MANUFACTURERS OF TIRE AND WHEEL CHANGING TOOLS
The KEN-TOOL Mfg. Co.
Akron 5, Ohio

CCJ Newscast

(CONTINUED FROM PAGE 218)

CAR SALE REGULATION UNLIKELY

Aside from adverse publicity for the trade as a whole because of the conduct of a few, a move toward some sort of governmental regulation, a probable tightening up of franchise agreements, closer supervision within agencies, and closer inspections of sales records by tax authorities are some expected results of Congressional probing into automobile sales practices.

While a move toward statutory regulation is regarded as in the cards, the success of any such attempt may be discounted. It is not clear what, if any, regulation is possible; therefore, legislators are unwilling to say what direction such a move would take.

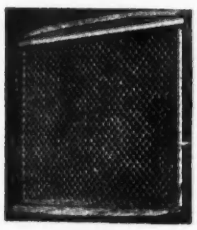
Also, by holding up to public view some of the most flagrant examples of such practices, the Macy subcommittee (House Public Works Committee), responsible for holding the hearings, hopes that public reaction will do the trick—that is, result in tighter dealer control and better agency supervision, thus making an attempt at legislation unnecessary.

Regardless of this point, there are several conclusions which may reasonably be drawn from the initial hearings. One is that in the future, local and federal tax authorities will give close attention to all tax returns by both automobile firms and automobile salesmen. It is a more than even chance that a system of spot checking may be instituted.

Another is that those in the trade who have not done so should immediately work toward putting their own houses in order.

(TURN TO PAGE 222, PLEASE)

ZEHR
COLLAPSIBLE TRUCK BACKS



Safe . . . easy and simple to handle. Zehr Truck Backs are all-welded steel designed for great strength and long continuous service. They are theft-proof, rust-proof and flexible. Write for details and prices.

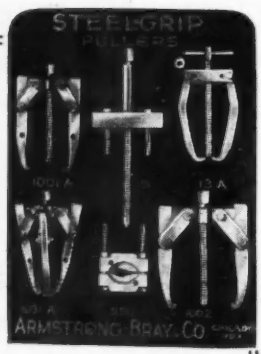
ZEHR PRODUCTS COMPANY
2130 East Hazzard Street, Philadelphia 25, Pa.

THE COMPLETE LINE that Completely Satisfies

Since 1906
The
Fitzgerald Mfg. Co.
Torrington, Connecticut

Fitzgerald
GASKETS

Pullers and Tool Rack



This permanent steel tool rack comes free with these six most needed STEELGRIP PULLERS.

The sizes and types of STEELGRIP Gear, Wheel and Bearing Pullers most needed and wanted by garages and maintenance shops. Quickly and easily remove gears, wheels and bearings from shafts.

ARMSTRONG-BRAY & CO.
5320 NORTHWEST HIGHWAY CHICAGO, ILL.

HEAVY DUTY MOTOR TRUCKS
AND
GASOLINE ELECTRIC GENERATING SETS

DUPLEX TRUCK COMPANY
Lansing, Michigan

DEVILBISS
Spray-Painting Equipment — Spray Booths — Canopy Exhaust Systems — Exhaust Fans — Air Compressors — Hose and Hose Connections — Oil Guns
Distributors or factory sales and service representatives everywhere
THE DEVILBISS COMPANY
Toledo 1, Ohio

YOU CAN DEPEND ON
McCORD GASKETS
MOST CAR AND TRUCK MAKERS DO

McCORD CORPORATION
Detroit, Michigan

• Gaskets • Radiators • Mufflers
Pipes and Oil Retainers

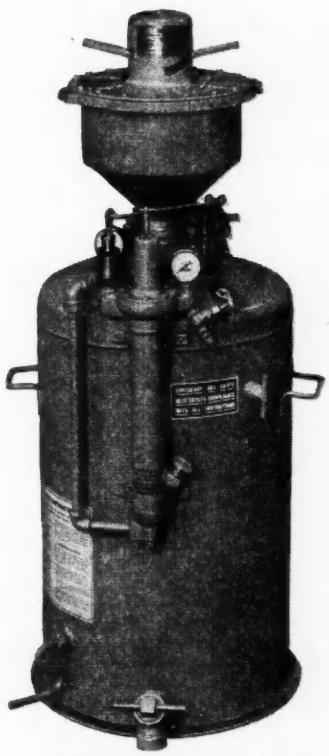
The Oxweld Trade-Mark MP-10 Generator will give you THE ACETYLENE YOU NEED ...WHERE YOU WANT IT ...WHEN YOU WANT IT

Economical – Produces approximately 4½ cu. ft. of acetylene from each one-pound charge of 14ND UNION Carbide. Whether you use a little or a lot of acetylene, it will cut your acetylene costs. It will save you enough to pay for itself *in only one year*, if you use about 150 cu. ft. of acetylene a week—in proportional time if you use more or less.

Easy to Use—Just a turn of a handle starts this generator. Once started, it works automatically. A built-in regulator controls flow of acetylene to blowpipe. Set and lock it once for any pressure from 3 to 11 lb. per sq. inch. Delivery pressure shows on the gauge.

Easy to Recharge – Recharging takes only a few minutes. Hopper detaches quickly from generating chamber, hangs on handle while you refill. Generating chamber flushes and refills through top opening.

Listed by Underwriters' Laboratories, Inc., and Factory Mutual Laboratories. Water-sealed against reverse flow of acetylene by hydraulic back-pressure valve. Two separate relief valves automatically vent excess pressure. Interference rod guards against recharging mistakes.



25-lb. carbide capacity

15-lb. carbide capacity

2 PORTABLE SIZES

Standard size, for average work, holds 15 lb. of carbide. It will produce as much as 30 cu. ft. of acetylene per hr., sufficient to weld ⅜-in. plate or cut 6-in. steel. *Heavy-duty size*, with carbide capacity of 25 lb., will produce enough acetylene (up to 50 cu. ft. per hr.) to weld 9/16-in. plate or cut 12 in. of steel. Either size can be used with any make or type of blowpipe.

ORDER FROM YOUR LOCAL JOBBER

or write us for his name and copy of free folder describing the MP-10 Generator.

THE LINDE AIR PRODUCTS COMPANY

Unit of Union Carbide and Carbon Corporation

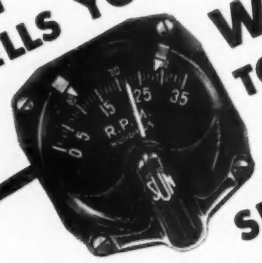
30 East 42nd Street UCC New York 17, N.Y.

In Canada:

Dominion Oxygen Company, Limited, Toronto

"Oxweld" and "Union" are trade-marks of Union Carbide and Carbon Corporation.

IT TELLS YOU When TO SHIFT



Your speedometer tells how fast you're going — how far you've gone.

The Sun Electric Tachometer indicates when the engine is operating in the efficient and economical range as determined by the manufacturer.

It indicates when to shift into a higher gear to avoid over-speeding or slip into a lower gear to prevent "lugging."

Its operation assures longer life of engine with lower upkeep expense. You get smoother performance and save on gas and oil, too.

Write today for complete information.

Approved and Distributed by TRUCKSTELL
SPECIALIZED EQUIPMENT FOR FLEET PERFORMANCE

THE TRUCKSTELL CO.
Union Commerce Bldg.
Cleveland 14,
Ohio

For Topmost Engine Performance and Economy You Need a SUN Electric TACHOMETER

Manufactured by SUN ELECTRIC CORPORATION, CHICAGO

CCJ Newscast

(CONTINUED FROM PAGE 220)

A plea by a dealer that he does not know that his salesmen are engaged in sharp practices is likely to fall upon deaf ears of any customers who have suffered from them.

This applies not only to car dealers but equally as well to garages, service stations and other facets of the trade which are closely related to the industry. Whether deserved or not, the hearings have indicated a rising tide of resentment and ill will on the part of the public, ready to break out against both dealers and other phases of the trade, upon the inevitable return of a buyers market.

HIT TOLL ROAD PROPOSALS

Leaders of five national groups of highway users have attacked toll roads as a threat to sound highway development in a preface to a new National Highway Users Conference publication entitled "Why the Toll Method of Financing Roads Is Unsound."

The Conference, which has some 1,000 affiliated national, state and local groups of highway users, opposes toll roads as "basically wrong because the highway user already is taxed to provide revenues to build roads, and he should not be compelled to pay a further tax." The toll-road issue will be a live one in many state legislatures meeting in 1949, including that of Ohio, where a big toll-road network is being proposed.

BRAKE SHOE CATALOG

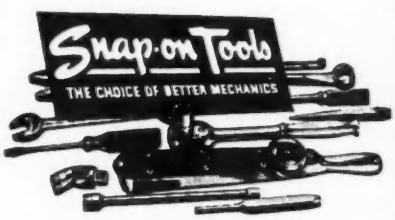
Announcement has been made by L. J. Miley Co., of Chicago, of the distribution of the new S9 steel brake shoe catalog containing all up-to-date information on late model brake shoes now being produced and supplied by Miley.

(TURN TO PAGE 224, PLEASE)

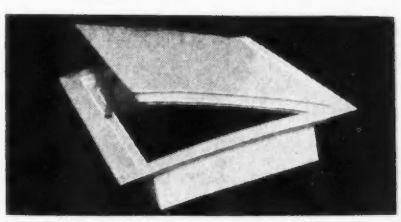
FRINK SNO-PLOWS
REG. U.S. PAT. OFF.
Both "V" TYPE and ONE WAY BLADE TYPE
hand or power hydraulic control
FOR ALL MOTOR TRUCKS FROM 1½ to 10 TONS
CARL H. FRINK, Mfr., CLAYTON, 1000 Isl., N. Y.
DAVENPORT-BESLER CORP., DAVENPORT, IOWA
FRINK SNO-PLOWS OF CAN. Ltd., TORONTO, ONT.

KINNEAR Rolling Doors

On truck bodies *or* buildings, Kinnear Doors are efficient, dependable, economical. Steel-slat curtain coils upward, out of way. Any size; motor operation if desired. Write for details.
THE Kinnear Manufacturing Company
2100-20 Fields Avenue, Columbus 16, Ohio



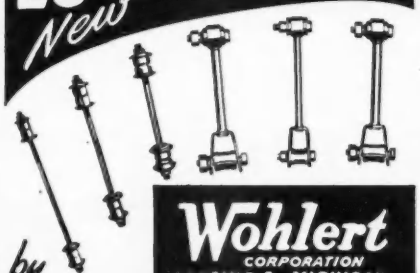
SNAP-ON TOOLS CORPORATION
8026-A 28th AVE. KENOSHA, WIS.



VENTILATOR DOORS $9.98
METALCRAFT ENGINEERING CORP.
Marietta, Ga., U.S.A.

WAUKESHA ENGINES
•
DIESEL
GASOLINE
BUTANE
ALL LIQUID OR GASEOUS FUELS

23 New SHOCK LINKS



by Wohlert CORPORATION
LANSING 5, MICHIGAN

BUY DIRECT AND SAVE
•
OIL FILTER ELEMENTS
for all Buses and Trucks
We have Users in your City
Ask us Who—
And get our prices.
REFILL FILTER CO.
120 Rhode Island Ave., East Orange, N. J.

Memo
To All Service Managers
Have YOU tried
Cleveland Hard Faced Valves?
Lower Cost — Better Performance
CLEVELAND HARD FACING, Inc.
2177 W. 28th Street CLEVELAND 13, OHIO

To all Fleet Owners operating approximately 35 or more units:

Permalux, *the* better truck decalcomania, is made with "Dulux" —is applied with water very quickly and needs no protective coating of varnish thereafter.

The following list showing where to obtain Permalux consultative sales service may be helpful.

E. I. du Pont de Nemours & Company, Inc., Refinish Branch Offices:

Atlanta, Ga.
621 Peachtree St., N. E.

Baltimore, Md.
2930 Remington Ave.

Birmingham, Ala.
1910 Avenue "B" South

Boston, Mass.
1019 Commonwealth Ave.

Brooklyn, N. Y.
67 34th St.

Buffalo, N. Y.
1065 Main St.

Charlotte, N. C.
500 N. Tryon St.

Chicago, Ill.
2530 S. Michigan Ave.

Cincinnati, Ohio
106 E. Court St.

Cleveland, Ohio
1608 East 24th St.

Columbus, Ohio
172 E. Long St.

Dallas, Tex.
2812 Gaston Ave.

Denver, Colo.
34th & Fox Sts.

Des Moines, Ia.
1206 Grand Ave.

Detroit, Mich.
510 Harper Ave.

Houston, Tex.
2219 McKinney Ave.

Indianapolis, Ind.
34-44 S. Senate Ave.

Jacksonville, Fla.
954 E. Adams St.

Kansas City, Mo.
401 E. 22nd St.

Memphis, Tenn.
625-27 Poplar Ave.

Miami, Fla.
50 N. E. Tenth St.

Milwaukee. Wis.
2601 N. Third St.

Minneapolis, Minn.
1207 Harmon Place

Newark, N. J.
79 Lock St.

New Orleans, La.
762 Baronne St.

New York, N. Y.
203 West 66th St.

Oklahoma City, Okla.
811-13 North Broadway

Philadelphia, Pa.
1717 North Street

Pittsburgh, Pa.
601 E. Robinson St.

Portland, Me.
255 Forest Ave.

Providence, R. I.
217 Broad St.

St. Louis, Mo.
3643 Delmar Blvd.

San Antonio, Tex.
504 Main St.

Toledo, Ohio
721 Adams St.

Washington, D. C.
1821 14th St., N. W.

Mr. Joseph S. Kaufman
406 Reliance Bldg.,
216 E. 10th St.,
Kansas City, Mo.

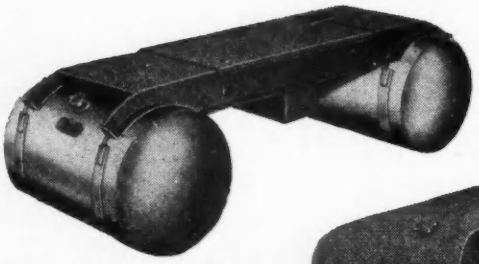
Mr. Homer L. Loew
Room 203
1900 Euclid Ave.,
Cleveland, Ohio

Mr. James D. McStay
1 Madison Ave.,
New York, N. Y.

THE Permalux COMPANY

Buy best, it's cheapest

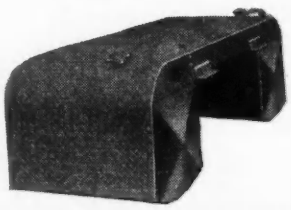
500 RATHBONE AVENUE **AURORA, ILL.**



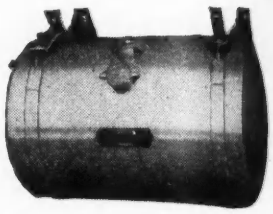
Snyder Safety Cylinder Tank and Tool Box Units use up wasted space by providing storage for tools, chains, power jacks, danger flags, etc. The jackwell is upright to prevent possible escape of jack fluid.

SNYDER SAFETY TANKS

A reflection of confidence in safety, dependability, and proven performance.



Snyder Safety Saddle Tanks occupy wasted space between the cab and fifth wheel. The top deck plate provides a safer means of crossing the chassis and carrying material, hose lines and spare tires. Fuel capacity of 75 to 150 gallons.



Cylinder Tanks are used where space is limited. They are constructed for standard or end fill. Capacity of 28 to 72 gallons.

For Catalog and Name of Your Nearest Dealer, Write:

SNYDER TANK CORPORATION

P. O. Box 14, Buffalo 5, New York — P. O. Box 2390, Birmingham 1, Ala.

HAVING GLASS TROUBLE?
TIME for PLEXIGLAS

We can solve your problems with hard to break, shatter-resistant PLEXIGLAS*, the clear plastic which is becoming increasingly popular for truck and car doors. It will last the life of the vehicle when properly handled.

The use of PLEXIGLAS in motor vehicle glazing has been permitted in most states. Try it for 60 days, if for any reason you are not satisfied we will refund your money.

Year	Make	Net Price
41-47	Ford Door	$8.45
41-47	Chev. Door	7.85
40-47	Dodge Door	7.85
37-47	(EH) Mack Door	10.19
37-47	LFT Mack Door	12.45
41-47	White Door	8.45
39-47	G.M.C.	7.85
41-46	Studebaker	5.40
37-47	International	8.83

Others $2.75 to $12.50. Prices on request.

Terms: C.O.D. or cash with order, F.O.B. Aberdeen

ABERDEEN AUTO PARTS

Box 283-C — Aberdeen, Md.

Phone Aberdeen 258

*PLEXIGLAS registered trade mark of Rohm & Haas Company.

Fleet Forms

GIVE COMPLETE SERVICE DATA AT A GLANCE

With Fleet Forms it's easy to keep complete service and cost records for every vehicle in your fleet. So simplified any attendant can keep these records. So complete you can see the whole story at a glance. Schedules, inspections and periodic maintenance, plus dozens of other types data . . . on one record. Write today for free samples and prices!

Fleet Forms — P.O. Box 793, Columbus 16, Ohio

You Can't Go Wrong!

Metal quill mounted on each plug stem.

The Wedler-Shuford Co.
St. Louis 3, Mo.

CCJ Newscast

(CONTINUED FROM PAGE 222)

SLOAN PREDICTS HIGH BUSINESS LEVEL FOR TWO OR THREE YEARS

Alfred P. Sloan, Jr., honored recently by 80 national and state leaders for his service to highway transportation at a National Highway Users Conference meeting, said that an expanding highway transportation system is fundamental to America's industrial expansion. He viewed as encouraging for the "next two or three years" the nation's economic prospects.

Mr. Sloan also gave emphasis to the need for an expanding highway transportation industry—"The highway is the focal point of three of the greatest industries we have in this country—the motor car industry, the oil industry, and the rubber industry. These three industries are really licensed to operate through the highway, and the impact of those particular industries on other industries has been stupendous."

He said the significance of highway transportation will gain further recognition through the work of the National Highway Users Conference, which is composed of some 1000 user groups, including automobile clubs, trucking associations, farm groups, and many other types of organizations. "If we recognize the significance of the highway as fundamental, then if we restrict its use we restrict the expansion of those great industries which I have mentioned."

DAVISSON JOINS YOUNG

Gordon Davisson has joined Young Radiator Co., Racine, Wis., as an engineering representative. He will devote his time primarily to field work and the service of Young customers.

END

(Please resume your reading on P. 42)

For better traction

Use **CLAW**

Double-Duty TRUCK CHAINS

Columbus McKinnon Chain Corporation

TONAWANDA, N. Y.

PREFERRED FOR REPLACEMENT

SKF BEARINGS

OLTMAN-O'NEILL

all-steel, all-welded

VAN TYPE **BODIES**

and Packettes — America's most outstanding Truck Body values — are immediately available. Sold through dealers only. Write or wire for franchise data.

OLTMAN-O'NEILL CO.

23500 Sherwood Ave., Centerline, Mich.

(Suburb of Detroit)

GUNITE

PROCESSED IRON • MALLEABLE IRON

ELECTRIC STEEL

CASTINGS

GUNITE FOUNDRIES CORPORATION

ROCKFORD • ILLINOIS

KEEP UP TO DATE! with **COLE-HERSEE**

Trailer Connectors — Accessories and Heavy Duty Switches.

COLE-HERSEE

The line that restores original equipment to trucks—trailers and busses.

SEND FOR COMPLETE CATALOG

COLE-HERSEE COMPANY

20 Old Colony Ave.-Boston 27, Mass.

CUT MAINTENANCE AND OPERATION COSTS WITH THE

DUREX
GASOLINE FILTER

The records show that improved engine performance and lower costs are the result when the Durex Gasoline Filter goes to work. The unique construction of this filter gives it outstanding efficiency.

An all metal filter—Durex strains out dirt, water, lint, scale and other particles harmful to proper carburetion. The Durex unit is composed of tiny bronze spheres, moulded and permanently bonded by heat . . . porous because of the microscopic spaces between the spheres. It's sturdy; it's fool-proof and does a perfect job of letting only pure gasoline get into the carburetor.

The Durex Gasoline Filter will not chip, flake, bend or break under ordinary use. You'll find it will last longer and will pay for itself many times over.

UNITED SERVICE MOTORS

Durex gasoline filters are distributed nationally by United Motors Service. Order a supply from your local distributor.

MORAINE PRODUCTS

DIVISION OF GENERAL MOTORS CORPORATION, DAYTON, OHIO

Servicing Welders

Simple instructions for getting long life and best performance out of oxy-acetylene and a.c. or d.c. electric welding equipment

THE secret of attaining long life, safe operation and efficient service from oxy-acetylene welding equipment is in setting up the unit correctly. While the unit is comparatively simple, there are a few procedures which must be observed if efficient service is to be obtained. The following instructions should be followed closely.

The first step is to fasten the cylinders securely. They should be tied to a work bench, wall or post, or they can be chained to each other, so that they will not be knocked down or pulled over.

After the valve-protecting cap has been removed, the oxygen cylinder should be cracked to clear the valve of dust and dirt. If this is not done, foreign material might mar the seat of the regulator inlet nipple, or it may be carried into the regulator.

In connecting the oxygen regulator to the oxygen cylinder care must be exercised that the union nut is tight. Oil should not be used here. Oil and grease should never come into contact with the oxygen or any equipment through which oxygen passes. Oil and grease may ignite violently in the presence of oxygen under high pressure.

Oxygen hoses should be adjusted and connected in accordance with directions and must be tight. The oxygen hose should be blown out by applying about 5 lb of pressure while holding the thumb over the end of the hose, releasing it and allowing the oxygen to blow through in puffs.

Loose connections which permit leaks are the cause of many fires. In addition, leaks waste oxygen and acetylene. The following connections should be tested periodically with soapy water. Close the blowpipe oxygen valve and adjust the oxygen regulator to 20 to 30 lb per sq in. pressure. Then test the oxygen cylinder valve stem with grease-free soap suds. If the cylinder leaks, notify the supplier.

Next test the connection between regulator and cylinder. If the connection leaks, close the cylinder valve, open the blowpipe oxygen valve, take off the regulator, clean the cylinder valve seat and regulator inlet nipple seat with a clean rag and replace the regulator and retest. Test all hose connections at the regulator and blowpipe. If tightening does not stop the leak, cut off 2 in. from the end of the hose and reconnect the hose to a nipple of correct size. Continue the tests of the blowpipe oxygen valve stem, acetylene cylinder valve stem, acetylene regulator inlet connections, hose connections and blowpipe acetylene valve.

Hose should be examined once a week for leaks, worn spots and loose connections. This is done by immersing the hose under normal working pressure in water and watching for air bubbles. Leaks should be repaired by cutting off the damaged section and inserting a standard hose splice.

For long life hoses should be protected from oil and grease. If such does accumulate, it can be removed with water and a cleaning agent. Gasoline or solvent should not be used to clean rubber hoses. Avoid burning of hose due to careless use of blowpipe, or from permitting hose to contact hot objects. Avoid kinking the hose, and do not allow it to be dragged over the floor. When vehicles are passing near, it can be protected by placing it between two planks. It is recommended that short lengths be used not only because they are more available, but because they are more easily protected from damage. Several short lengths can be joined when required. Blowpipes should be operated only at recommended pressures. They should be kept in good repair to avoid damaging flashbacks. Rubber deteriorates while on the shelf, so it is to the advantage of the shop to purchase hose only when needed.

A.C. Arc Welders

IN order to receive long uninterrupted service from the arc welder, it is necessary only to keep it in a dry, well-ventilated location. Dust and dirt should not be allowed to accumulate on the transformer windings as it may eventually cause excessive heating. Dust and dirt can be removed by blowing out with air. Ordinarily the plugs and taps will keep themselves clean by the wiping action created when they are coupled together, but in event that the welder is not used for a long period of time, they may become dirty and corroded and should be cleaned with fine sand paper.

Ventilation around the machine should be reasonably good, as cooling of the transformer depends on free circulation of air up and

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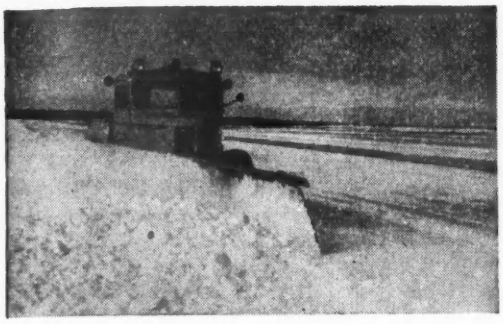

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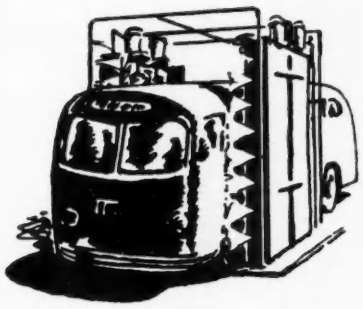

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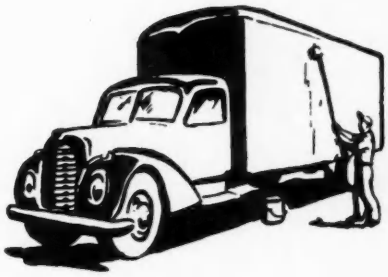

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Servicing Welders

Continued from Page 226

through the cabinet. Do not cover the louvers in the rear panel or obstruct the free passage of air through the bottom. Always keep the plug connection tight or the high current they carry may tend to cause heating. Never make or break the plug connection when current is flowing in the cables as burning and pitting of the contact surfaces will result.

An insulated electrode holder is most desirable since it provides the operator with protection and prevents accidental contact of the electrode holder with the work or the operator. The electrode holder should be kept in good condition by replacing the insulation segments when necessary and occasional cleaning of the jaws by filing away arc spots. The welding cable should be connected securely to the electrode holder and maintained that way in order to avoid excessive resistance which causes overheating of the electrode holder.

Attached to the ground cable is a large "C" clamp that can easily be fastened to the work or welding table at some convenient point. The clamp must always be screwed tight to a clean spot in order to get a good electrical connection that can carry the welding current from the welding electrode back through the ground cable to the ground lead terminal on the welder. The ground clamp should be securely fastened to the ground clamp at all times as a frayed cable or loose connection results in excessive resistance and overheating causing loss of efficiency and poor performance.

Motor-Generator Welders

THE following instructions should be observed in caring for the motor-generator type welders:

1. Blow out welder and controls with dry air at least once every two months—once every week in dirty locations—with low air pressure to avoid driving dirt into insulation.

2. Current control contacts are self-lubricating and should not be greased. Keep contacts clean.

3. Starting switch should be inspected every six months. Any accumulation of dirt or dust should be brushed or blown off the insulating parts.

4. Keep electrode and ground connections tight. Use cable sizes recommended according to welding current and cable length.

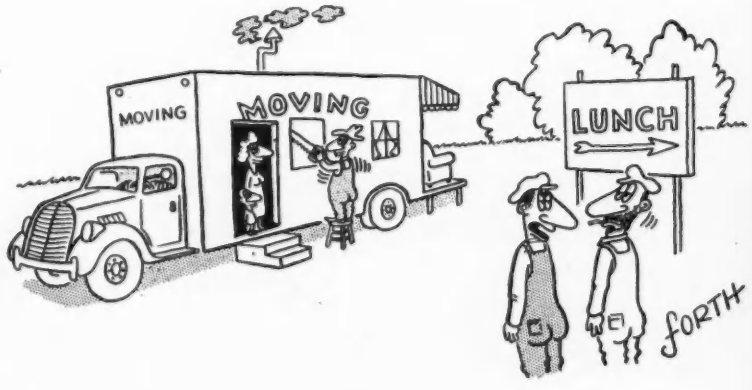
Brushes should be replaced before the pigtails are within ⅛ in. of the commutator or before the limit of spring travel is reached. Replace with the same kind of brushes that was originally furnished. Sand in brushes according to instructions in the instruction manual. One complete set of brushes should always be kept on hand.

New brushes must be sanded in before they can be used on the machine. This is accomplished by removing the old brush from the holder, placing the new brush in position with a piece of medium sandpaper placed under the brush. A second person should hold the brush in its normal position by a slight pressure of the fingers. The sandpaper then should be drawn back and forth under the brush with the back of sandpaper held closely in contact with the commutator. This will wear the brush down to the curve of the commutator. When the end of the brush has the proper curve, the operation is complete. Care should be exercised to blow all of the carbon dust away from the commutator.

The commutators require practically no attention. They should be cleaned from time to time with a clean rag, or while running with a piece of fine sandpaper. Never use emery cloth or paper for this purpose. It is desirable to check the brush springs occasionally to make sure they are holding the brushes on the commutator with a firm, even pressure.

Each welder is equipped with ball bearings having sufficient grease to last one year under the most severe service. An ounce of grease each year is sufficient for each bearing. A pad of grease 1 in. long, 1 in. high and 1 in. wide weighs approximately one oz. Also, the grease cup when used holds approximately ½ oz.

Dirt is responsible for more ball bearing failures than any other causes. This dirt may get into the grease cup when it is removed to refill, or it may get into the grease in its original container. Before removing the grease cup or pipe plug, it is important that it be wiped absolutely clean. A piece of dirt no larger than the period at the end of this sentence may cause a bearing to fail in a short time. Even small particles of grit that float around in factory atmosphere are dangerous if in sufficient quantity.



"I warned you to stay behind and watch the truck!"